Islamic Republic of Afghanistan

Ministry of Public Health
General Directorate of Preventive Medicine
Public Nutrition Department

Integrated Guidelines for the Management of Acute Malnutrition

Date: January-2014
Foreword

The Ministry of Public Health is pleased to present the most recently revised version of the Integrated Management of Acute Malnutrition (IMAM) guideline. Management of Acute Malnutrition started in Afghanistan by the help of international NGO since 1996. Different NGOs were using diverse guidelines and treatment protocols and their effectiveness in Afghanistan context was never assessed. However, in 2003, when the Public Nutrition Department was established in the MoPH, the Unicef and WHO supported the ministry to develop a treatment guideline based on international experiences and mainly adapted from WHO guideline on management of acute malnutrition. In 2008, when Public Nutrition Department introduced a new approach for management of Severe Acute Malnutrition through out-patient treatment called Community-based Treatment Care (CTC) the guidelines and protocols were revised. However, based on international experiences and the comparative advantages, the MoPH introduced Community-based Management of Acute Malnutrition (CMAM) in 2010 that replaced the CTC and subsequently guidelines were revised. Since then, the nutrition partners are implementing the CMAM with support from Nutrition cluster as an emergency response mechanism.

In order to address the need at all levels and develop a sustainable programming model, the MoPH decided to scale up management of acute malnutrition through BPHS and EPHS and redirected its focus from “emergency focused” to “development and sustainable programming”. The first attempts as pilot in few provinces indicated that there is need for a comprehensive and integrated guideline with simple terminologies and clear definitions to help the health workers in proper detection and management of acute malnutrition in different levels. In 2013, with the help of nutrition cluster and Unicef, the MoPH hired an international consultant from Valid International organization to assess the situation and guide the public nutrition department in preparing a standard guideline that is based on scientific evidences, international experiences as well as contextualized to the Afghanistan realities. The PND team and the consultant conducted an in-depth study of the situation through reviewing documents, patients’ files, and observing directly the practices of health workers in several provinces. As a result of this study the revised guideline for management of acute malnutrition called “Integrated Management of Acute Malnutrition – IMAM” was drafted. A working group was established under leadership of the public nutrition department and membership of several international and national organizations to review the draft guideline and the result of all these efforts are now the revised guideline on management of acute malnutrition.

This revised guideline is covering detection of acute malnutrition at different level of health system, treatment through out-patient and in-patient wards, counselling with mothers and caretakers, and assessing /managing malnutrition with its broad causes and dimensions such as micronutrients, infant and young child feeding practices and home-based caring.

The MoPH is pleased to urge implementation of this document as national guideline through all levels of health system for combating the problem of malnutrition in Afghanistan.

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The Public Nutrition Department (PND) of Ministry of Public Health (MoPH) acknowledges with gratitude WHO, WFP, Nutrition Cluster particularly UNICEF support’s for the Integrated Management of Acute Malnutrition (IMAM) national guideline’s revision, updating protocols with latest evidences, integration of acute malnutrition with IYCF and micronutrients, integration of out-patient and in-patient treatment of acute malnutrition and finally preparing an adaptable guideline within the context of Afghanistan.

We thank Paul Binns from VALID International for in-depth assessment of the situation revision and integration of IMAM guideline in the light of new knowledge and progress in the field.

Dr. Ahmad Nawid Qarizada and Dr. Bariz Sahebzada from Public Nutrition Department for facilitation, coordination, field visit and getting all pieces of work together to develop this guideline.

We are grateful of all implementing partners for providing feedback and supporting technically in preparation of this work, among them ACF, IMC, OXFAM Novib, HN-TPOs. The staff and leadership of Indera Gandhi Child Health Institute, Ataturk Hospital, Maiwand Hospital, provincial hospitals in several of the provinces of Afghanistan who participated actively in the situation analysis and providing technical in-puts in this guideline.

Various stakeholders and health professionals of Afghanistan also contributed to revision and integration process. The MoPH thanks them for their efforts.

Finally we thank the leadership of the Ministry of Public Health of Afghanistan, especially Dr. Mohammad Taufiq Mashal General Director of Preventive Medicine for their support to the department of Public Nutrition to play effectively the stewardship role in the nutrition sector.

Bashir Ahmad Hamid
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ABBREVIATIONS

AWG  Average Weight Gain
BHC  Basic Health Centre
CHC  Comprehensive Health Centre
CHS  Community Health Supervisor
CHW  Community Health Worker
C-IMCI  Community – Integrated Management of Childhood Illness
CMV  Combined Mineral Vitamin Mix
Diluted F100  Diluted Formula 100 therapeutic milk
DH  District Hospital
ER  Emergency Room
FAO  Food and Agriculture Organisation
F 75  Formula 75 therapeutic milk
F 100  Formula 100 therapeutic milk
Hb  Haemoglobin
HIV  Human Immunodeficiency Virus
IMAM  Integrated Management of Acute Malnutrition
IMCI  Integrated Management of Childhood Illness
IPD  Inpatient Department
IPD-SAM  Inpatient Department for Severe Acute Malnutrition
IYCF  Infant and Young Child Feeding
LO-ORS  Low Osmolarity Oral Rehydration Solution
LOS  Length of Stay
MAM  Moderate Acute Malnutrition
MCH  Mother and Child Health
MNT  Multiple Micronutrient Tablet
MoPH  Ministry of Public Health
MUAC  Mid-Upper Arm Circumference
NCHS  National Centre for Health Statistics
NG  Nasogastric
OPD  Outpatient Department
OPD-MAM  Outpatient Department for Moderate Acute Malnutrition
OPD-SAM  Outpatient Department for Severe Acute Malnutrition
ORS  Oral Rehydration Solution
PCV  Packed Cell Volume
PH  Provincial Hospital
PLW  Pregnant or Lactating Woman
ReSoMal  Rehydration Solution for Malnutrition
RUSF  Ready to Use Supplementary Food
RUTF  Ready to Use Therapeutic Food
SAM  Severe Acute Malnutrition
TB  Tuberculosis
OPD-MAM  Out-Patient Department for Moderate Acute Malnutrition
UNICEF  United Nations Children's Fund
WFA  Weight for Age
WFH/L  Weight for Height / Length
WFP  World Food Programme
WHO  World Health Organization
INTRODUCTION

PURPOSE OF GUIDELINES
The National Guideline for Integrated Management of Acute Malnutrition was developed as a tool to assist health workers in the assessment and appropriate management with services and/or counselling for the treatment both Moderate Acute Malnutrition (MAM) and Severe Acute Malnutrition (SAM). Strict implementation of the guidelines with a strong emphasis on the community outreach services can significantly contribute towards reducing the under-five mortality rate due to acute malnutrition.

TARGET AUDIENCE FOR GUIDELINES
The National Guideline for Integrated Management of Acute Malnutrition is intended for use by health managers, health staff, nutritionists and community workers supported by the required level of training and with adequate resources to perform the activities and deliver treatment in a safe and effective manner. The guidelines can also be used by training institutions to standardize the management of acute malnutrition with new graduates joining the health force.

The guidelines will also help responders involved in nutrition rehabilitation during emergencies to standardize treatment protocols established by the MoPH. Local adaptations may be made in service implementation depending on available resources; these should be done with the collaboration and consent of MoPH.

KEY CONSIDERATIONS
Implementation of the National Integrated Guidelines for Management of Acute Malnutrition should consider the following:

- Services to provide care of the child or pregnant / lactating woman with acute malnutrition should be decentralised as far as possible to achieve maximum case coverage
- Efforts must emphasise the regular and effective screening of children in the community and in the health facilities
- Acute malnutrition, for children with no IMCI danger signs should be managed in the community wherever trained staff and facilities are available
- Efforts to manage acute malnutrition must go hand in hand with efforts to curb the underlying causes of malnutrition in the target area
- Services should be provided in such a way as to ensure effective linkages between treatment services and implement a smooth chain of service provision between community, outpatient and inpatient care
- Consult with MoPH Technical Officers for additional support where required

ORGANISATION OF SERVICES FOR THE TREATMENT OF ACUTE MALNUTRITION
The assessment and management of malnutrition is part of the holistic care offered through the Basic Package of Health Services (BPHS) in Afghanistan. Previously these treatments were available only as part of emergency programming but are now integrated into the BPHS so that holistic care can be offered through the standard health facilities.
The management of acute malnutrition can now be made available through simple treatment protocols at all levels of health services. This is not a stand-alone service and should be linked with other treatments/services available at the health facility and in the community.

The identification of acute malnutrition starts in the community with the active finding of cases through activities which are integrated into the usual activities of the Community Health Worker (CHW) and Community Health Supervisors (CHS). Once identified, cases of acute malnutrition can be referred to the local health facility for further assessment and management.

At the health facility an assessment of the child or Pregnant or Lactating Woman (PLW) will decide what treatment is appropriate. Cases of acute malnutrition which are not associated with any other serious medical illness (complications) may be treated as outpatients through the local health facility.

Cases where there is acute malnutrition associated with a complication require referral to an inpatient unit for more intensive treatment. After a period of stabilisation, the individual with acute malnutrition may be referred back to the local health facility for continuing treatment as an outpatient until cure from community to Hospital, the management of acute malnutrition operates as a single service and requires strong linkages between the community and local health facility and the hospital.

**CONTENT OF THE GUIDELINES**

The guidelines are divided into the following sections. Each section is colour coded for easy reference:

- Introduction
- Section 1: Overview of Malnutrition
- Section 2: Assessment & Triage of Acute Malnutrition
- Section 3: Community Outreach
- Section 4: Outpatient Management of Acute Malnutrition for Children 6-59 months
- Section 5: Outpatient Management of Acute Malnutrition for Pregnant and Lactating Women
- Section 6: Inpatient Management of Severe Acute Malnutrition for Children 6-59 months
- Section 7: Inpatient Management of children aged less than 6 months and inpatient management of children older than 6 months weighing less than 4 kg
SECTION 1: OVERVIEW OF MALNUTRITION

This section contains the following sub-sections:

- Definition of Malnutrition
- Causes of Malnutrition
- Pathophysiology of Malnutrition
- Classification of Malnutrition
- Prevention and Treatment of Malnutrition
- Micronutrient Deficiencies
- Infant and Young Child Feeding

DEFINITION OF MALNUTRITION

Malnutrition\(^1\) is a term which comprises all forms of ‘bad’ nutrition which includes both ‘under-nutrition’ and ‘over-nutrition’. In the context of these guidelines, the term malnutrition relates exclusively to under-nutrition; in particular, the guidelines focus on the treatment of one type of under-nutrition called ‘Acute Malnutrition’.

Under-nutrition may be defined as a lack of the minimum amount of proteins, carbohydrates, lipids, vitamins, minerals, and other nutrients essential for health and proper growth. Under-nutrition may result from an inadequate food intake or a disease process resulting in an imbalance of or mal-absorption of nutrients or increased nutrient requirements / losses.

CAUSES OF MALNUTRITION

Malnutrition is a disease\(^2\) which is caused by the interaction of many factors. The UNICEF conceptual framework for malnutrition [Figure 1 below] provides a way to understand how these causes are related to each other. The causes are divided into immediate causes, underlying causes and basic causes. The way in which these factors interact with each other is different for each country, for communities within each country and even for individuals within each community.

Immediate Causes:

Inadequate food intake and disease are inextricably linked. Food intake refers to both the quantity and quality of food required to provide adequate amounts of nutrients for health and growth. A poor intake of food may adversely affect the individual by disturbing biochemical processes which causes a decrease in organ function. This affects every organ in the body. The reduced function of body systems may lead to the onset or worsening of other disease conditions.

The presence of infection may directly increase the nutritional requirements of the body because fever elevates body temperature and the rate of utilisation of nutrients increases. Vomiting and diarrhoea may adversely affect the absorption and utilisation of nutrient intake because the food does not pass through the gut in the usual way which may lead to an inadequate nutrient availability to the body. These immediate causes affect the individual. The treatment of the immediate causes of malnutrition requires attention to both adequate dietary intake according to age and the treatment of any other medical problems.

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\(^2\) Disease: a disordered or abnormal condition of an organ or other part of an organism resulting from the effect of genetic or developmental errors, infection, nutritional deficiency, toxicity, or unfavourable environmental factors; illness; sickness.
Underlying Causes:
The immediate causes of malnutrition may be affected by other factors. An adequate food intake for the individual will not be possible if the food available in the household will not provide the diet needed to avoid malnutrition. When any people do not at all time have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life is called food insecurity\(^3\). An inadequate dietary intake may also result from inadequate child or maternal care. For example a child aged less than 6 months may not be provided with exclusive breastfeeding, or the recommended complementary feeding practices for older infants are not used [see annexes 3 to 7]. Disease may also be caused through inadequate child care, for example the child may not have been vaccinated against preventable diseases or there may be inadequate hygiene practices in the home. It may be that there are no adequate or accessible services available for the vaccination of children or the provision of proper hygiene. An inadequate *public health environment* also contributes to the likelihood of infection or other diseases ultimately leading to malnutrition. The underlying causes are usually those seen at the household or community level.

Basic Causes:
The underlying causes described above may be related to other factors which are beyond the control of individuals and often communities. These factors, which may include the international economy, national economy or national health and education infrastructure, contribute to a situation where it is difficult to provide the education or the services required to prevent disease or provide the education on eating a healthy diet.

**FIGURE 1 UNICEF CONCEPTUAL FRAMEWORK FOR MALNUTRITION**

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3. Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.
PATHOPHYSIOLOGY OF MALNUTRITION

Malnutrition is a process which occurs over time. As the availability of nutrients to the body is reduced the body undergoes adaptation. Traditionally this has been referred to as Protein Energy Malnutrition, however this term is misleading. This lack of adequate nutrients is related not only to proteins but also to other nutrients including those micronutrients which are also essential for growth; in fact the absence of micronutrients alone can produce signs and symptoms of malnutrition. In children malnutrition affects growth in various ways; the child may grow more slowly in height (stunting) they may become thin (wasting) or they may be found to be less than the normal weight for their age (underweight). When recovering from malnutrition, both macronutrients AND micronutrients must be present in the diet in the proper proportions to allow recovery and catch up normal growth which has been lost.

All nutrients are essential to the body, but some have different uses. Some nutrients are required for normal systemic function but are not essential for growth while some nutrients must be present in the right amounts in order for growth to occur. Nutrients may be divided into two types according to their FUNCTION in the body, those which are essential for growth and those which are not. The classification is based on the response to a deficiency of the nutrients.

**Type 1 Nutrients:** These nutrients, when deficient produce specific clinical signs which are diagnostic for the deficiency. Administration of the deficient nutrient reverses the clinical signs. These nutrients are NOT essential for growth.

**Type 2 Nutrients:** These nutrients must be present in the diet in the right proportions for proper growth to occur and include both macronutrients and micronutrients. A deficiency in one nutrient produces a deficiency in all. The signs and symptoms of a deficiency in these nutrients are indistinguishable from each other.

Examples of type 1 and type 2 nutrients and the differences in response to deficiency are given in annex 1.

**ANNEX 1**

<table>
<thead>
<tr>
<th>Type 1 nutrients</th>
<th>Type 2 nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>Water</td>
</tr>
<tr>
<td>Copper</td>
<td>Potassium</td>
</tr>
<tr>
<td>Manganese</td>
<td>Sodium</td>
</tr>
<tr>
<td>Iodine</td>
<td>Magnesium</td>
</tr>
<tr>
<td>Selenium</td>
<td>Zinc</td>
</tr>
<tr>
<td>Calcium</td>
<td>Phosphorous</td>
</tr>
<tr>
<td>Fluorine</td>
<td>Protein</td>
</tr>
<tr>
<td>Thiamin</td>
<td>Nitrogen</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>Carbon skeletons of essential amino acids</td>
</tr>
<tr>
<td>Pyridoxine</td>
<td>Threonine</td>
</tr>
<tr>
<td>Nicotinic Acid</td>
<td>Lysine</td>
</tr>
<tr>
<td>Cobalomin</td>
<td>Sulphur</td>
</tr>
<tr>
<td>Folate</td>
<td>Oxygen</td>
</tr>
<tr>
<td>Ascorbic Acid</td>
<td></td>
</tr>
<tr>
<td>Retinol</td>
<td></td>
</tr>
</tbody>
</table>
Differences between type 1 and type 2 deficiency response

<table>
<thead>
<tr>
<th>Type 1 nutrients</th>
<th>Type 2 nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth continues in early stages</td>
<td>Growth failure first response</td>
</tr>
<tr>
<td>Specific clinical signs develop</td>
<td>No specific clinical signs</td>
</tr>
<tr>
<td>Body stores nutrients</td>
<td>No body store of nutrients</td>
</tr>
<tr>
<td>Concentrated in particular tissues</td>
<td>Not concentrated in any particular tissue</td>
</tr>
<tr>
<td>Specific enzymes affected</td>
<td>General effect on metabolism</td>
</tr>
<tr>
<td>Not usually anorexic</td>
<td>Anorexia a common response</td>
</tr>
<tr>
<td>Tissue concentration independent of other types of nutrients</td>
<td>Dependent upon all the other type 2 nutrients</td>
</tr>
<tr>
<td>Tissue concentration drops with deficiency</td>
<td>Tissue concentration maintained with deficiency</td>
</tr>
<tr>
<td>Tissue concentration maintained in different metabolic states</td>
<td>Tissue concentration may change depending on metabolic state</td>
</tr>
<tr>
<td>Food sources very variable</td>
<td>Ratio in foods not very variable</td>
</tr>
<tr>
<td>Diagnosed by biochemical tests</td>
<td>Do not give specific biochemical abnormalities</td>
</tr>
<tr>
<td>Anthropometric abnormality appears late in the deficiency</td>
<td>Diagnosed by anthropometric abnormality</td>
</tr>
</tbody>
</table>

A mild deficiency of a type 2 nutrient slows linear growth in children. If the deficiency continues over a period of time, the child appears significantly shorter than other children of the same age and sex. This process is called 'stunting' and is sometimes referred to as a form of 'chronic malnutrition' because it occurs over months or years. Important this process is most noticeable during the first 2 years of life when the child is growing most rapidly and has the greatest need for nutrients. After the age of 2 years the stunting becomes irreversible so there is a great emphasis put on ensuring he best nutrition for the child in this period.

When there is a mild deficiency causing stunting, there may be no other clinical signs of the deficiency; the shape of the body is normal. When the deficiency of type 2 nutrients is greater, linear growth stops altogether but the child never grows shorter. When there are even greater deficiencies, the body stats to get thinner (wasting). The classification and measurement of malnutrition falls into 2 broad categories ‘chronic’ and ‘acute’ malnutrition.

1. Chronic Malnutrition
   a. Stunting measured by height for age

2. Acute Malnutrition
   a. Wasting measured using mid upper arm circumference or weight for height
   b. Oedema measure by the presence and extent of bilateral pitting oedema
3. **Underweight**
   Measured by weight for age and can either be a sign of stunting or wasting, or a combination of both.

4. **Micronutrients Malnutrition**
   Encompass a wide range of disorders that are due to a low intake or utilization of micronutrients. Different symptoms and disorders are associated with each micronutrient, explained in below (Page 16).

Although these categories appear separate, there is some overlap and the different forms of malnutrition can all occur together in the same individual. The category of *underweight* is measured by comparing the weight of the child with the normal (median) weight of normally nourished child of the same age. A child may be underweight for their age because they have stunting, because they have wasting or some combination of stunting AND wasting.

Using weight for age and height for age are useful measurements to assess the growth of the child. Wasting and oedema are associated with an increased risk of mortality. Identifying children with wasting and oedema and giving the appropriate treatment is therefore a priority.

**The pathophysiology of acute malnutrition**

The process of wasting occurs as a ‘reductive adaptation’ to nutrient shortage. Physiological and behavioural changes occur which reduce the need for nutrients and reduce energy expenditure. During this adaptation organs and physiological systems reduce or lose their ‘redundant capacity’ and the individual is no longer able to adapt to changes in the external or internal environment as was previously possible. Maintaining this excess functional capacity is very costly in terms of the nutrition required so that the reduction of the organ function saves on the amount of nutrients and energy needed to sustain it. All of the systems in the body are affected by these changes.

As reductive adaptation continues, the individual becomes more prone to infections and less able to respond to that infection. Organ functions continue to deteriorate; the liver loses its capacity to metabolise and detoxify protein. Further ingestion of protein could be potentially fatal and the individual loses their appetite as a self defence mechanism, preferably digesting their own body tissues for the metabolites needed for survival.

The loss of appetite is a crucial point in the process where, without specialised interventions (such as therapeutic milk) the process is irreversible and death results quickly. By this point the normal physiology is highly deranged with fluids and electrolytes present in abnormal levels in the different body compartments.

In the initial stages of treatment of severe wasting, this pathophysiology must be reversed carefully, during a stabilisation phase using low protein milk (excess protein can be fatal to the child) and low energy (excessive energy can induce re-feeding syndrome leading to death). As cellular processes recover, fluid and electrolytes move between compartments (e.g. from intercellular to intravascular spaces). If heart and kidney function has not also recovered to an adequate extent, fluid overload may occur and heart failure and death may occur quickly.

More importantly, during the recovery process, the replacement of a single deficient type 2 nutrient at the normal daily requirement does not reverse the wasting and allow rapid catch up growth. During the rapid catch up growth following wasting, all of the required nutrients must be present in higher than normal quantities.
The consequences of acute malnutrition affect every organ and system, giving rise to the typical signs and symptoms seen. Annex 2 gives an overview of the effects of acute malnutrition on each organ system.

The point at which breakdown of physiological coping mechanisms occurs differs for each child. As systems become disrupted IMCI danger signs and other complications start to occur.

The presence of bilateral pitting oedema is always a sign of severe acute malnutrition. In children, other conditions such as nephritic syndrome also give rise to oedema however the two conditions can usually be distinguished through examination and the taking of a careful history. In the case of nutritional oedema, the swelling is first expressed in the feet and lower limbs whilst in nephritic syndrome; the oedema is usually present in the facial features first.

The aetiology of nutritional oedema is quite different from nephritic syndrome although the consequences of oedematous malnutrition also result in high mortality. Recent studies suggest a genetic predisposition to oedema rather than wasting. The formation of oedema results from a protein losing enteropathy however it is not due primarily to a low protein diet; low protein diets are used to reverse this form of malnutrition as with wasting.

It appears from studies that the development of oedema results in a preservation of lean tissue to some extent and may even be protective in terms of the development and progression of certain diseases. In any case the treatment of this condition is the same as for children with wasting. Cases of severe oedema marked by swelling which is generalised and includes the facial features is associated with high mortality.

Occasionally, oedema occurs which is combined with severe wasting. When both forms of SAM are present the risk of mortality is high and treatment is given in the inpatient setting. This combination of severe wasting and oedematous malnutrition is called ‘Marasmic-Kwashiorkor’

If the acute malnutrition is detected before complications have occurred, cases of moderate or severe wasting and cases of mild and moderate oedema can be successfully treated in the outpatient setting. It is only cases with complications or very severe forms of acute malnutrition which need treatment in an inpatient unit.

**CLASSIFICATION OF ACUTE MALNUTRITION**

A new classification of malnutrition was devised so as to differentiate cases which can be managed in the community and which need referral to inpatient care. The primary classification is whether the individual has any medical complications since this is the main factor deciding on inpatient or outpatient care. The classification of severe and moderate cases of acute malnutrition is defined by anthropometric measurements or by the presence and grade of oedema. It is the classification by anthropometry which decides the most appropriate treatment as an inpatient or as an outpatient. These are described further in section 2, [The Assessment and Triage of Acute Malnutrition]

---

WHAT IS INTEGRATED MANAGEMENT OF ACUTE MALNUTRITION (IMAM)?

IMAM represent a continuum of care for acute malnutrition that consist of four components working together to optimize the treatment of malnutrition according the severity of the condition.

They Include:

1. Community Outreach
2. Outpatient Department for Moderate Acute Malnutrition (OPD-MAM)
3. Outpatient Department for Severe Acute Malnutrition (OPD-SAM)
4. Inpatient Department for Severe Acute Malnutrition (IPD-SAM)

---

PREVENTION AND TREATMENT OF MALNUTRITION

Malnutrition is best prevented rather than cured. While many of the basic causes of malnutrition are beyond the control of individuals and communities, it is possible to mitigate some of these causal factors through the provision of quality services, counselling and education.

- Immunisation
- Promotion of hygiene & sanitation
- Nutrition counselling (especially important for children aged less than 2 years)
- Behavioural change to encourage timely seeking of preventative / curative services
- Promotion of understanding and recognition of malnutrition in the community
- Promotion of the right quantity and quality of the child’s diet

The prevention and identification of malnutrition is not solely a health issue, it involves a role for other sectors. At the level of the health facility, the proper assessment and referral of children for services at every contact opportunity plays a vital role in its prevention or timely treatment of malnutrition.

The prevention and treatment of malnutrition is not a stand-alone service, it is part of the holistic care of the child which is offered through the BPHS and Essential Package of Health Services (EPHS). New research and developments in the approach to identification and treatment of malnutrition have enabled the development of simple protocols which can be implemented at community level and allow the child to have access to services provided locally and the child to be treated at home.

Disease and poor food intake are the immediate causes of malnutrition as illustrated above (see figure 1). The prevention of malnutrition in part may be achieved through proper dietary intake. This is especially important for children in the first 2 years of life and the correct feeding according to the child’s age is essential. The QUALITY of food intake is as important as the QUANTITY. Micronutrients play a vital role in proper growth and development6 and should be part of the counselling given to mothers. A varied diet rich in micronutrients should be advised for the pregnant or breastfeeding mother and for the child over the age of 6 months.

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ANNEX 2  CONSEQUENCES OF ACUTE MALNUTRITION

| Cardiovascular System | • Cardiac output and stroke volume are reduced  
|                       | • Sudden increases in cardiovascular volume may result in heart failure  
|                       | • Reduced blood pressure compromises tissue/organ perfusion  |
| Gastro-intestinal system | • Production of gastric acid is reduced compromising the first line of immunity  
|                       | • Intestinal motility is decreased  
|                       | • Production of digestive enzymes is reduced  
|                       | • Pancreas is atrophied  
|                       | • Intestinal mucosa/microvilli are atrophied allowing invasion of pathogens through the stomach wall leading to diarrhoea  
|                       | • Absorption of nutrients is reduced when large amounts of food are eaten  
|                       | • Normal gut flora is disturbed with an overgrowth of pathogenic bacteria  |
| Liver function | • Abnormal metabolites of amino acids are produced  
|               | • Detoxification of by-products of protein metabolism (ammonia) is compromised  
|               | • Reduced storage of glycogen  
|               | • Reduced gluconeogenesis (increasing the risk of hypoglycaemia)  
|               | • Bile secretion is reduced  
|               | • Heat production (normally 1/3rd of body requirements) is reduced  
|               | • Transferin activity is reduced limiting capacity to absorb and reduce iron.  |
| Genitourinary system | • Renal perfusion and circulation time are reduced  
|                   | • Glomerular filtration is reduced  
|                   | • Sodium excretion is reduced  
|                   | • Urinary phosphate output is low  
|                   | • Ability to concentrate urine reduced  |
| Immune system | • Lymph glands, tonsils and thymus are atrophied  
|               | • Cell mediated T-cell immunity is severely reduced  
|               | • IgA levels in secretions are reduced  
|               | • Complement components are low  
|               | • Production of phagocytes is reduced and do not kill ingested bacteria efficiently  
|               | • Acute phase immune response is diminished  
|               | • Tissue damage does not result in normal inflammation or white cell migration  
|               | • Hypothalamic temperature regulation is impaired  |
| Endocrine system | • Insulin production is reduced and glucose intolerance increased  
|                   | • Insulin Growth Factor (IGF-1) production is reduced  
|                   | • Growth hormone production is reduced  
|                   | • Cortisol levels increased  |
| Circulatory system | • Plasma volume is usually normal  
|                   | • Red cell volume is reduced  |
| Homeostasis | • Basal Metabolic Rate reduced by 30%  
|                 | • Temperature regulation is impaired producing poikilothermy  
|                 | • Reduced energy expenditure through reduced activity  
|                 | • Sodium pump activity is reduced  
|                 | • Cell membranes are more permeable than normal, which leads to an  
|                 | • Increased intracellular sodium  
|                 | • Decreased intracellular potassium and magnesium  |
| Skin, Muscles and Exocrine Glands | • The skin and subcutaneous fat are atrophied, which leads to loose folds of skin.  
|                               | • Normal signs of dehydration are unreliable; eyes may be sunken because of loss of  
|                               | • subcutaneous fat in the orbit.  
|                               | • Many glands, including the sweat, tear and salivary glands are atrophied; the child has  
|                               | • dryness of the mouth, and eyes and sweat production is reduced.  
|                               | • Respiratory muscles are easily fatigued; the child is lacking in energy.  |
| Psychological | • Child may be easily irritable  
|                | • Child may be lethargic  
|                | • Rumination may occur after feeding  
|                | • Child may experience developmental delays  |
**MICRONUTRIENT DEFICIENCIES**

Another important form of malnutrition is micronutrient deficiencies. The most common forms of micronutrient deficiencies are:

- Iron / folate causes anaemia
- Vitamin A causes night blindness & xerophthalmia, Bitot spots
- Iodine causes goitre & cretinism
- Vitamin C causes scurvy
- Niacin (B3) causes pellagra
- Thiamin (B1) causes beriberi

The requirements for micronutrients for children and women of various ages are indicated in table 3 below. The Afghanistan National Guidelines of Micronutrients (prevention, control and treatment), 2010, gives specific advice for each of the major micronutrients. The provision of micronutrients in the diet may be enhanced by advising mothers to buy foods which are fortified or through the provision of micronutrient supplements as part of routine health services. During pregnancy and after delivery, the mother should be advised regarding proper micronutrient intake as part of ante-natal and post-partum services.

**TABLE1 MICRONUTRIENT REQUIREMENTS FOR CHILDREN AND WOMEN**

<table>
<thead>
<tr>
<th></th>
<th>Vitamin A (mcg/d)</th>
<th>Vitamin C (mg/d)</th>
<th>Folate (mcg/d)</th>
<th>Iodine (mcg/d)</th>
<th>Iron (mg/d)</th>
<th>Zinc (mg/d)</th>
<th>Vitamin D (mcg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-6 m</td>
<td>400</td>
<td>40</td>
<td>65</td>
<td>110</td>
<td>0.27</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>7-12 m</td>
<td>500</td>
<td>50</td>
<td>80</td>
<td>130</td>
<td>11</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 yrs.</td>
<td>300</td>
<td>15</td>
<td>150</td>
<td>90</td>
<td>7</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4-8 yrs.</td>
<td>400</td>
<td>25</td>
<td>200</td>
<td>90</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>9-13 yrs.</td>
<td>600</td>
<td>45</td>
<td>300</td>
<td>120</td>
<td>8</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>14-18 yrs.</td>
<td>700</td>
<td>65</td>
<td>400</td>
<td>150</td>
<td>15</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>19-30 yrs.</td>
<td>700</td>
<td>75</td>
<td>400</td>
<td>150</td>
<td>18</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>31-50 yrs.</td>
<td>700</td>
<td>75</td>
<td>400</td>
<td>150</td>
<td>18</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>51-70 yrs.</td>
<td>700</td>
<td>75</td>
<td>400</td>
<td>150</td>
<td>8</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>&gt;70 yrs.</td>
<td>700</td>
<td>75</td>
<td>400</td>
<td>150</td>
<td>8</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td><strong>Pregnancy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>≤18 yrs.</td>
<td>750</td>
<td>80</td>
<td>600</td>
<td>220</td>
<td>27</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>19-30 yrs.</td>
<td>770</td>
<td>85</td>
<td>600</td>
<td>220</td>
<td>27</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>31-50 yrs.</td>
<td>770</td>
<td>85</td>
<td>600</td>
<td>220</td>
<td>27</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td><strong>Lactation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤18 yrs.</td>
<td>1200</td>
<td>115</td>
<td>500</td>
<td>290</td>
<td>10</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>19-30 yrs.</td>
<td>1300</td>
<td>120</td>
<td>500</td>
<td>290</td>
<td>9</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>31-50 yrs.</td>
<td>1300</td>
<td>120</td>
<td>500</td>
<td>290</td>
<td>9</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

When a woman becomes acutely malnourished during pregnancy this affects the birth weight of the child; low birth weight children are at higher risk of mortality. Supplementary food rations and micronutrient supplements used to treat an acutely malnourished pregnant or lactating woman aim to reduce this risk and are detailed further in section 5 of these guidelines.

The utilisation of micronutrients is increased during disease so that health staffs should be mindful that the normal diet of the child may not provide enough micronutrients to prevent the child from becoming malnourished. When there is illness or diarrhoea, the health staff should advise the carer not to stop feeding and to increase the food intake of the child.

**INFANT AND YOUNG CHILD FEEDING (IYCF)**

The vast majority of child malnutrition in Afghanistan occurs in children aged less than 2 years, the greatest proportion of these being in children aged less than 6 months. These children are most vulnerable due to the proportionally higher energy and nutrient requirements according to body weight than any other age group coupled with their vulnerability to disease.

The prevention of disease and malnutrition in this group starts with the early initiation of breastfeeding (within 1 hour of birth) and the giving of colostrum. The colostrum is the mothers’ first milk and due to the antibodies it contains it is considered to be the baby’s first vaccination. On-going care should involve the giving of exclusive breastfeeding for the first 6 months of life and childhood vaccinations against preventable diseases. The continuation of breastfeeding to the age of 2 years and the proper introduction of age appropriate complementary foods after the age of 6 months combine to give the child the best start in life, preventing disease and growth retardation (stunting). After the age of 2 years the child grows relatively more slowly and the effects of malnutrition and stunting become essentially irreversible.

The feeding of infants and young children may be subject to many cultural practices which are detrimental to the developing child. Proper counselling is an essential part of the provision of health services for this age group. Details of such counselling and recommended practices are detailed in the Afghanistan National Strategy for Infant and Young Child Feeding and MoPH IYCF guidelines.

Counselling on Infant and Young Child Feeding (IYCF), forms part of an integrated strategy on the reduction of child mortality and morbidity. It is essential that strong linkages between IYCF, IMCI, vaccination and other maternal and child services are formed to maximise the impact of these approaches.

**COUNSELLING SKILLS:**

**A: Listening and learning**

**Introduction**

Counselling is a way of working with people in which you understand how they feel, and help them to decide what to do.

In these sessions you will discuss mothers who are breastfeeding and how they feel.

Breastfeeding is not the only situation in which counselling is useful.

Counselling skills are useful when you talk to patients or clients in other situations. You may also find them helpful with your family and friends, or your colleagues at work. Practise some of the techniques with them - you may find the result surprising and helpful.

---

The first two counselling skills sessions are about 'listening and learning'. A breastfeeding mother may not talk about her feelings easily, especially if she is shy, and with someone whom she does not know well. You need the skill to listen, and to make her feel that you are interested in her. This will encourage her to tell you more. She will be less likely to "turn off", and say nothing.

Notes about the skills for listening and learning

Skill 1. Use helpful non-verbal communication
Non-verbal communication means showing your attitude through your posture, your expression, everything except through speaking. Helpful non-verbal communication makes a mother feel that you are interested in her, so it helps her to talk to you.

Skill 2. Ask open questions
Open questions are very helpful. To answer them a mother must give you some information. Open questions usually start with "How? What? When? Where? Why?"
For example: "How are you feeding your baby?"

Closed questions are usually less helpful. They tell a mother the answer that you expect, and she can answer them with a "Yes" or "No". They usually start with words like "Are you? Did he? Has he? Does she?" For example: "Did you breastfeed your last baby?" If a mother says "Yes" to this question, you still do not know if she breastfed exclusively, or if she also gave some artificial feeds.

To start a conversation, general open questions are helpful.
For example: "How is breastfeeding going for you?"
To continue a conversation, a more specific open question may be helpful.
For example: "How many hours after he was born did he have his first feed?"

Sometimes it is helpful to ask a closed question, to make sure about a fact.
For example: "Are you giving him any other food or drink?"
If she says "Yes", you can follow up with an open question, to learn more.
For example: "What made you decide to do that?" or "What are you giving him?"

Skill 3. Use responses and gestures which show interest
Another way to encourage a mother to talk is to use gestures such as nodding and smiling, and simple responses such as "Mmm", or "Aha". They show a mother that you are interested in her.

Skill 4. Reflect back what the mother says
Reflecting back means repeating back what a mother has said to you, to show that you have heard, and to encourage her to say more. Try to say it in a slightly different way. For example, if a mother says: "My baby was crying too much last night."
You could say: "Your baby kept you awake crying all night?"

Skill 5. Empathize - show that you understand how she feels
Empathy or empathizing means showing that you understand how a person feels. For example, if a mother says: "My baby wants to feed very often and it makes me feel so tired," you could say: "You are feeling very tired all the time then?"
This shows that you understand that she feels tired, so you are empathizing.
If you respond with a factual question, for example, "How often is he feeding? What else do you give him?" you are not empathizing.
Skill 6. Avoid words which sound judging

Judging words are words like: right, wrong, well, badly, good, enough, properly. If you use these words when you ask questions, you may make a mother feel that she is wrong, or that there is something wrong with her baby. However, sometimes you need to use the “good” judging words to build a mother’s confidence (see Session 11 ‘Building confidence and giving support’).

HELPFUL NON-VERBAL COMMUNICATION

- Keep your head level
- Pay attention
- Remove barriers
- Take time
- Touch appropriately

LISTENING AND LEARNING SKILLS

- Use helpful non-verbal communication
- Ask open questions
- Use responses and gestures which show interest
- Reflect back what the mother says
- Empathize - show that you understand how she feels
- Avoid words which sound judging

B: BUILDING CONFIDENCE AND GIVING SUPPORT

Introduction

The third and fourth counselling skills sessions are about ‘building confidence and giving support’. A breastfeeding mother easily loses confidence in herself. This may lead her to give unnecessary artificial feeds, and to respond to pressures from family and friends to give artificial feeds. You need the skill to help her to feel confident and good about herself. Confidence can help a mother to succeed with breastfeeding. Confidence also helps her to resist pressures from other people.

It is important not to make a mother feel that she has done something wrong. She easily believes that there is something wrong with herself or with her breastmilk, or that she is not doing well. This reduces her confidence.

It is important to avoid telling a breastfeeding mother what to do. Help each mother to decide for herself what is best for her and her baby. This increases her confidence.

Notes about the skills for building confidence and giving support
Skill 1. Accept what a mother thinks and feels

Sometimes a mother has a mistaken idea that you do not agree with. If you disagree with her, or criticise, you make her feel that she is wrong. This reduces her confidence. If you agree with her, it is difficult later to suggest something different.

It is more helpful to accept what she thinks. Accepting means responding in a neutral way, and not agreeing or disagreeing. Reflecting back and responses and gestures which show interest are both useful ways to show acceptance, as well as being useful listening and learning skills.

Sometimes a mother feels very upset about something that you know is not a serious problem. If you say something like "Don't worry, there is nothing to worry about!" you make her feel that she is wrong to feel the way that she does. This makes her feel that you do not understand, and it reduces her confidence. If you accept that she is upset, it makes her feel that it is alright to feel the way she does, so it does not reduce her confidence. Empathizing is one useful way to show acceptance of how a mother feels.

Skill 2. Recognize and praise what a mother and baby are doing right

As health workers, we are trained to look for problems. We see only what we think people are doing wrong, and we try to correct them. As counsellors, we must learn to look for and recognize what mothers and babies do right. Then we should praise or show approval of the good practices.

Praising good practices has these benefits:
- It builds a mother's confidence;
- It encourages her to continue those good practices;
- It makes it easier for her to accept suggestions later.

Skill 3. Give practical help

Sometimes practical help is better than saying anything. For example:
- When a mother feels tired or dirty or uncomfortable;
- When she is hungry or thirsty;
- When she has had a lot of advice already;
- When you want to show support and acceptance;
- When she has a clear practical problem.

Some ways to give practical help are these:
- Help to make her clean and comfortable;
- Give her a warm drink, or something to eat;
- Hold the baby while she gets comfortable.

Fig. 26

Which response is more appropriate?
"You should let the baby suckle now, to help your breast-milk to come in."
"Let me try to make you more comfortable, and then I'll bring you a drink."
Skill 4. Give a little, relevant information

Relevant information is information which is useful for a mother NOW.

When you give a mother information, remember these points:
- Tell her things that she can do today, not in a few weeks time.
- Try to give only one or two pieces of information at a time, especially if she is tired, and has already received a lot of advice.
- Wait until you have built her confidence, by accepting what she says, and praising what she and her baby do right. You do not need to give new information or to correct a mistaken idea immediately.
- Give information in a positive way, so that it does not sound critical. This is especially important if you want to correct a mistaken idea.

Skill 5. Use simple language

Use simple familiar terms to explain things to mothers. Remember that most people do not understand the technical terms that health workers use.

Skill 6. Make one or two suggestions, not commands

Be careful not to tell or command a mother to do something. This does not help her to feel confident. Instead, when you counsel a mother, suggest what she could do differently. Then she can decide if she will try it or not. This leaves her feeling in control, and helps her to feel confident.

<table>
<thead>
<tr>
<th>CONFIDENCE AND SUPPORT SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Accept what a mother thinks and feels</td>
</tr>
<tr>
<td>☐ Recognize and praise what a mother and baby are doing right</td>
</tr>
<tr>
<td>☐ Give practical help</td>
</tr>
<tr>
<td>☐ Give a little, relevant information</td>
</tr>
<tr>
<td>☐ Use simple language</td>
</tr>
<tr>
<td>☐ Make one or two suggestions, not commands</td>
</tr>
</tbody>
</table>
THE BASIC ELEMENTS OF COUNSELLING FOR IYCF ARE DESCRIBED IN ANNEXES 3-7.

ANNEX 3 NUTRITION FOR PREGNANT AND BREASTFEEDING WOMAN

- During your pregnancy, eat one extra small meal or “snack” (extra food between meals) each day to provide energy and nutrition for you and your growing baby.
- You need to eat the best foods available, including milk, fresh fruit and vegetables, meat, fish, eggs, grains, peas and beans.
- Drink whenever you are thirsty.
- Taking tea or coffee with meals can interfere with your body’s use of the foods. Limit the amount of coffee you drink during pregnancy.
- During pregnancy and breastfeeding, special nutrients will help your baby grow well and be healthy.
- Take iron and folic-acid tablets to prevent anaemia during pregnancy and for at least 3 months after your baby’s birth.
- Take vitamin A tablets immediately after delivery or within 6 weeks so that your baby receives the vitamin A in your breast milk to help prevent illness.
- Use iodised salt to help your baby’s brain and body develop well.
- Attend antenatal care at least 4 times during pregnancy. These check-ups are important for you to learn about your health and how your baby is growing.
- Take de-worming tablets to help prevent anaemia.
- To prevent malaria, sleep under an insecticide-treated mosquito to net and take anti-malarial tablets as prescribed.
- Learn your HIV status, attend all the clinic appointments and take your medicines as advised by your health provider.
- Adolescent mothers: you need extra care, more food and more rest than an older mother. You need to nourish your own body which is still growing, as well as your growing baby’s.
Breast-milk provides all the food and water that your baby needs during the first 6 months.

Do not give anything else, not even water, during your baby’s first 6 months.

Even during very hot weather, breast milk will satisfy your baby’s thirst.

Giving your baby anything else will cause him/her to suckle less and will reduce the amount of breast milk that you produce.

Water, other liquids and foods can make the baby sick.

You can give medicines if they are recommended by your health provider.

Exclusive breastfeeding means feeding your baby ONLY breast-milk for the first 6 months.

Breast-milk provides all the food and water that your baby needs during the first 6 months of life.

Exclusive breast-feeding for the first 6 months protects your baby from many illnesses, such as diarrhoea and respiratory infections.
- When you exclusively breast-feed your baby during the first 6 months and have no menses, you are protected from another pregnancy.

- Mixed feeding means feeding your baby both breast-milk and any other foods or liquids, including infant formula, animal milks, or water.

- Mixed feeding before 6 months can damage your baby’s stomach.

- Mixed feeding increases the chances that your baby will suffer from illnesses such as diarrhoea and pneumonia, and from malnutrition.

- Giving your baby foods or any kind of liquids other than breast milk including infant formula, animal milks or water before 6 months can damage your baby’s stomach. This reduces the protection that exclusive breastfeeding gives and all of the benefits that your baby gets from breast milk.

- Breast feed your baby on demand, day and night.

- More suckling (with good attachment) makes more breast milk.

- Crying is a late sign of hunger. Early signs that your baby wants to breastfeed include:
  - Restlessness
  - Opening mouth and turning head from side-to-side
  - Putting tongue in and out
  - Suckling on fingers and fists

- Let your baby finish one breast before offering the other. Switching back and forth from one breast to the other prevents the baby from getting the nutritious ‘hindmilk’. The ‘foremilk’ has more water and satisfies the baby’s thirst. The ‘hindmilk’ has more fat and satisfies your baby’s hunger.

- If your baby is ill or sleepy, wake him or her to offer the breast often.

- Do NOT use bottles, teats or spouted cups. They are difficult to clean and can cause your baby to become sick.

**Feeding the sick baby aged less than 6 months**

- Breastfeed more frequently during illness, including diarrhoea, to help the baby fight sickness, reduce weight loss and recover more quickly.
Breastfeeding also provides comfort to your sick baby. If your baby refuses to breastfeed encourage your baby until he or she takes the breast again.

Give only breast milk and medicines recommended by your doctor/ healthcare provider.

If the baby is too weak to suckle, express breast milk to give the baby. This will help you to keep up your milk supply and prevent breast difficulties.

After each illness, increase the frequency of breastfeeding to help your baby regain health and weight.

When you are sick, you can continue to breastfeed your baby. You may need extra food and support during this time.

Annex 5 COMPLEMENTARY FEEDING 6-9 MONTHS

Continue breastfeeding your baby on demand both day and night. This will maintain his/her health and strength as breast milk continues to be the most important part of your baby’s diet

Breast milk supplies half (1/2) baby's energy needs from 6 to 12 months

Breastfeed first before giving other foods

When giving complementary foods to your baby, think; Frequency, amount, thickness, variety, active /responsive feeding and hygiene
  - Frequency: Feed your baby complementary foods 3 times per day
  - Amount: Increase amount gradually to half (1/2) cup (250 ml cup; show amount in cup brought by the mother). Use a separate plate to make sure the young child eats all the food given
  - Thickness: Give pureed/mashed family foods. By 8 months baby can begin eating finger foods
  - Variety: Try to feed a variety of foods at each meal. For example;
    - Animal source foods (flesh meats, eggs and dairy products)
    - Staples (grains, roots and tubers)
    - Legumes and seeds
    - Vitamin A rich fruits and vegetables and other fruits and vegetables
Feeding the sick baby aged more than 6 months

- Offer the baby simple foods Breastfeed more frequently during illness, including diarrhoea, to help your baby fight sickness, reduce weight loss and recover more quickly.
- Your baby needs more food and liquids while he or she is sick.
- If your child's appetite is decreased, encourage him or her to eat small frequent meals.
- Offer the baby simple foods like porridge and avoid spicy or fatty foods. Even if the child has diarrhoea, it is better for him or her to keep eating.
- After your baby has recovered, actively encourage him or her to eat one additional meal of solid food each day during the following two weeks. This will help your child regain the weight he or she has lost.
- When you are sick, you can continue to breastfeed your baby. You may need extra food and support during this time. When you are sick, you will also need plenty of liquids.

ANNEX 6 COMPLEMENTARY FEEDING FROM 9 UP TO 12 MONTHS

- Continue breastfeeding your baby on demand both day and night. This will maintain his/her health and strength as breast milk continues to be the most important part of your baby’s diet.
- Breast milk supplies half (1/2) baby’s energy needs from 6 to 12 months.
- Breastfeed first before giving other foods.
- When giving complementary foods to your baby, think; Frequency, amount, thickness, variety, active /responsive feeding and hygiene
  - Frequency: Feed your baby complementary foods 4 times per day
  - Amount: Increase amount gradually to half (1/2) cup (250 ml cup; show amount in cup brought by the mother). Use a separate plate to make sure the young child eats all the food given.
  - Thickness: Give finely chopped family foods, finger foods, sliced foods.
  - Variety: Try to feed a variety of foods at each meal. For example;


• Animal source foods (flesh meats, eggs and dairy products)
• Staples (grains, roots and tubers)
• Legumes and seeds
• Vitamin A rich fruits and vegetables and other fruits and vegetables

ANNEX 7 COMPLEMENTARY FEEDING 12-24 MONTHS

➢ Continue breastfeeding your baby on demand both day and night. This will maintain his/her health and strength as breast milk continues to be the most important part of your baby’s diet

➢ Breast milk continues to make up about one third (1/3) of the energy needs of the young child from 12 up to 24 months

➢ To help your baby continue to grow strong and breastfeed, you should use a family planning method to prevent another pregnancy

➢ When giving complementary foods to your baby, think; Frequency, Amount, Thickness, Variety, Active/Responsive Feeding and Hygiene
  o Frequency: Feed your young child complementary foods 5 times per day
  o Amount: Increase amount to three quarters (3/4) to one (1) cup (250 ml cup; show amount in cup brought by mother). Use a separate plate to make sure young child eats all the food given
  o Thickness: Give foods cut into small pieces, finger foods, sliced food
  o Variety: Try to feed a variety of foods at each meal. For example;
    ▪ Animal source foods (flesh meats, eggs and dairy products)
    ▪ Staples (grains, roots and tubers)
    ▪ Legumes and seeds
    ▪ Vitamin A rich fruits and vegetables and other fruits and vegetables
WHY FIRST 1000 DAYS OF LIFE:

The 1,000 days between a woman’s pregnancy and her child’s 2nd birthday offer a unique window of opportunity to shape healthier and more prosperous futures. The right nutrition during this 1,000 day window can have a profound impact on a child’s ability to grow, learn, and rise out of poverty. It can also shape a society’s long-term health, stability and prosperity.

Today, under-nutrition is still a leading cause of death of young children throughout the world. For infants and children under the age of two, the consequences of under-nutrition are particularly severe, often irreversible, and reach far into the future.

Leading scientists, economists and health experts agree that improving nutrition during the critical 1,000 day window is one of the best investments we can make to achieve lasting progress in global health and development.

Solutions that make a difference

Solutions to improve nutrition in the 1,000 day window are readily available, affordable and cost-effective. They include:

1. Promoting good nutritional practices, including breastfeeding and appropriate, healthy foods for infants;
   A. Initiation of breastfeeding within one hour of birth
   B. Exclusive breastfeeding until 6 months
   C. Continued breastfeeding at a sustained high level at least for the first year and continued breastfeeding until two years and beyond
   D. Appropriate complementary feeding (introduction of solid/semi-solid foods)

Ensuring that mothers and young children get the necessary vitamins and minerals they need.
SECTION 2: ASSESSMENT, DIAGNOSIS & TRIAGE OF ACUTE MALNUTRITION

This section contains the following sub-sections:

- Assessment of Acute Malnutrition in Children aged 6 to 59 months
- Assessment of Acute Malnutrition in Children aged less than 6 months
- Assessment of Acute Malnutrition in Pregnant or Lactating Women

The assessment of acute malnutrition requires an assessment of both anthropometric status and clinical signs and symptoms in order to triage and treat the cases appropriately. The assessment of acute malnutrition varies according to the age of the child which also differs from the assessment of pregnant and lactating women (PLW).

ASSESSMENT OF ACUTE MALNUTRITION IN CHILDREN AGED 6 TO 59 MONTHS

The measurement of anthropometric criteria is a proxy for the physiological changes happening in the body. They are not precise measures but they do have a relationship to the risk of mortality. Currently the measures used are:

- Mid-Upper Arm Circumference (MUAC)
- Weight for Height / Length (using WHO growth standards, 2006)
- Oedema (graded according to severity)

These different measures are not equal to each other; they identify different children. All of these anthropometric indicators are independent criteria for admission meaning that the child should be treated for acute malnutrition if ANY ONE OF THEM applies.

Because of the simplicity of measuring MUAC and oedema it can be used to detect acute malnutrition in the community and at health facilities. The assessment of MUAC and oedema are the first priority in the assessment of acute malnutrition. If acute malnutrition is identified using MUAC or oedema there is no need to also use weight for height to confirm the diagnosis.

Measuring weight for height is more time consuming and labour intensive than measuring MUAC and oedema and should be done at the health facility level only. This can also be a problem at busy clinics when caseloads are high therefore when caseloads and time allow the measurement of weight for height it should be used to screen children for acute malnutrition AFTER MUAC and oedema have been found to be normal but acute malnutrition is still suspected.

MID UPPER ARM CIRCUMFERENCE (MUAC)

The measurement of the mid upper arm provides a measure of both the fat and the lean muscle mass of the upper arm. During the progress of malnutrition as lean mass is lost the risk of death becomes greater.

Since 2005, MUAC has been recognised by WHO and other UN agencies as the best indicator for the risk of mortality in children between 6-59 months. While MUAC changes with age as the child grows, the risk of death as measured by MUAC is independent of age for the 6-59 months age group.
Figure 3 below illustrates the increasing risk of mortality as the MUAC becomes less and the child becomes more acutely malnourished.

- MUAC 11.5 to less than 12.5cm = 1.5 x increased risk  (indicates Moderate Acute Malnutrition)
- MUAC less than 11.5cm = 4-20 x increased risk  (indicates Severe Acute Malnutrition)

MUAC can be used for both admission and discharge from treatment for MAM / SAM. The technique for measuring MUAC is illustrated in annex 8.

FIGURE 3  MUAC AS AN INDICATOR FOR THE RISK OF MORTALITY

Source: Myatt et al, 2005

WEIGHT FOR HEIGHT OR LENGTH (WFH/L)
Weight for height also identifies children at increased risk of mortality from acute malnutrition. This is particularly true of the new WHO growth standards (2006). The old National Centre for Health Statistics (NCHS) standards do not accurately reflect the risk of mortality and should not be used.

FIGURE 4  RISK OF MORTALITY ACCORDING TO WEIGHT FOR HEIGHT (WHO, 2006)


8 Myatt et al 2005: A review of methods to detect cases of severely malnourished children in the community for their admission into community based therapeutic care programs; WHO informal global consultation for the community-based management of severe malnutrition
WFH/L less than -2Z scores to -3Z scores indicates Moderate Acute Malnutrition
WFH/L less than -3Z scores indicates Severe Acute Malnutrition

The techniques for measuring weight, height and weight for height are illustrated in annexes 9, 10 and 11 respectively.

Oedema
Oedematous malnutrition is ALWAYS an indication of severe acute malnutrition. The oedema can be graded according to its severity and this has implications in terms of where the child should be treated.

Annex 12 illustrates the classification of oedema as noted below. The important features to notice are that nutritional oedema is always bilateral. Oedema of only one limb may be indicative of another disease process. Oedematous malnutrition always begins in the feet and as severity increases it becomes more widespread:

- **Grade 1+** oedema: Bilateral pitting oedema of the feet
- **Grade 2+** oedema: Bilateral oedema of the feet and lower limbs / hands
- **Grade 3+** oedema: Generalised oedema of feet, lower limbs, hands and periorbital

Grade 1+ and 2+ may be treated as an outpatient. Grade 3+ must always be treated as an inpatient due to the high risk of mortality.

Marasmic-Kwashiorkor
The terms wasting and oedema are preferable to the terms Marasmus and Kwashiorkor respectively. However, all of these terms continue to be used. One form of acute malnutrition is called Marasmic-Kwashiorkor (MK). This is a combination of both forms of severe acute malnutrition and is associated with a very high mortality risk. Children with MK should ALWAYS be treated as inpatients irrespective of other clinical signs and symptoms.

Children older than 6 months weighing less than 4 kg
Children who are older than six months but weight less than 4 kg should be referred to an inpatient unit for treatment. Children in this category may be suffering developmental delay and the immaturity of their organs (e.g. kidney function) requires careful nutritional management in the inpatient unit using the same therapeutic milk used for children aged less than 6 months. **RUSF and RUTF are unsuitable for this group of children**

After measuring the child using MUAC, weight for height and the assessment of oedema the child can be classified regarding the degree of acute malnutrition.
TABLE 2  CLASSIFICATION OF ACUTE MALNUTRITION IN CHILDREN 6-59 MONTHS BASED ON ANTHROPOMETRY

<table>
<thead>
<tr>
<th>Age</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moderate Acute Malnutrition</td>
</tr>
<tr>
<td>6 to 59 months</td>
<td>♦ MUAC: less than 12.5 to 11.5 cm or</td>
</tr>
<tr>
<td></td>
<td>♦ WFH/L less than -2Z to -3Z scores and</td>
</tr>
<tr>
<td></td>
<td>♦ Oedema is absent</td>
</tr>
</tbody>
</table>

**CLINICAL SIGNS**
As acute malnutrition progresses, a process of reductive adaptation occurs [section 1]. When the adaptations begin to break down the child becomes progressively more vulnerable to complications. Ultimately the child may lose their appetite. These clinical signs are used together with the measurements of MUAC, oedema and weight for height to decide how it is most appropriate to treat the child (triage).

**CLINICAL COMPLICATIONS**
Complications which may develop during the progress of acute malnutrition are shown below in table 3. These complications include the IMCI danger signs among others. A child presenting with acute malnutrition with any of these complications must be triaged carefully.

- A child with SAM + complications must be treated in an inpatient unit providing therapeutic care for SAM
- A child with MAM + complications must be referred to the paediatric ward of the hospital

**TABLE 3  CLINICAL COMPLICATIONS OF ACUTE MALNUTRITION**

<table>
<thead>
<tr>
<th>Clinical complication</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High fever</td>
<td>Greater than 39 C (102.2 F)</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>Less than 35.5 C (96 F)</td>
</tr>
<tr>
<td>Persistent vomiting</td>
<td>Vomits all food and fluids</td>
</tr>
<tr>
<td>Severe dehydration</td>
<td>Clinical signs + recent history of fluid loss</td>
</tr>
<tr>
<td>Severe anaemia</td>
<td>Severe palmar pallor</td>
</tr>
<tr>
<td>Unconscious / convulsing</td>
<td>Reduced level of consciousness / lethargy / fitting</td>
</tr>
<tr>
<td>Difficult or fast breathing</td>
<td>2 to 12 months min 12 to 59 months min</td>
</tr>
<tr>
<td></td>
<td>Greater than 50 breaths / Greater than 40 breaths /</td>
</tr>
<tr>
<td>Skin lesions</td>
<td>Extensive skin ulceration requiring IV / IM antibiotics</td>
</tr>
</tbody>
</table>
APPETITE

The loss of appetite in a child with acute malnutrition may indicate a serious pathophysiology [section 1]. In order to be treated as an outpatient, the child must be able to eat the Ready to Use Foods which are provided as part of the treatment.

- RUSF  Ready to Use Supplementary Food  Used to treat MAM in OPD-MAM
- RUTF  Ready to Use Therapeutic Food  Used to treat SAM in OPD-SAM

The appetite is assessed for a child identified as being acutely malnourished. This is called “the appetite test” and is done at the time of the initial diagnosis of acute malnutrition and at every follow up visit to the health facility until the child is discharged cured.

NB: RUSF and RUTF are not suitable for children aged less than 6 months.

THE APPETITE TEST

When testing appetite, the child should be given clean water to drink before and during the test and if required the carer and child may go to a quiet space where the child can eat the RUSF/RUTF with encouragement from the carer. The appetite test may take up to 30 mins and may be done while the health staff continues to see other patients.

In any case, a child considered to have a poor appetite as indicated by the categories in table 4 below MUST be transferred to hospital for further assessment.

The appetite test

1. Ask the carer to wash their hands with soap and water
2. Tear open the packet of RUSF / RUTF at the corner
3. Offer the child sips of clean water before beginning the appetite test
4. Children older than 2 years may hold the packet themselves if they are able to feed themselves and children younger than 2 years require assistance to feed themselves
5. The carer should offer a small amount of RUSF/RUTF from the corner of the packet or if the child needs assistance a small amount on a spoon or the carers finger
6. Immediately give the child more water to sip
7. Repeat the cycle of RUSF/RUTF followed by sips of water until the test is complete as indicated in Table 4
8. For children who are sick or unwilling, the appetite test may take up to 30 mins. The test may continue in a quiet corner for this time while the staff continue seeing other cases

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18. Term of T-SFP has been changed to OPD-MAM in this guideline.

19. Term of OTP has been changed to OPD-SAM in this guideline.
TABLE 4  CATEGORISATION OF THE APPETITE TEST

<table>
<thead>
<tr>
<th>Age / Weight</th>
<th>Good appetite</th>
<th>Poor appetite</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 5kg</td>
<td>Eats at least ¼ packet</td>
<td>Eats less than ¼ packet</td>
</tr>
<tr>
<td>More than 5kg</td>
<td>Eats at least 1/3 packet</td>
<td>Eats less than 1/3 packet</td>
</tr>
<tr>
<td>More than 6 months AND less than 4 kg</td>
<td><strong>DO NOT USE RUSF/RUTF IN THIS GROUP – TRANSFER TO INPATIENT CARE</strong></td>
<td></td>
</tr>
</tbody>
</table>

A child with a good appetite may be treated as an outpatient. If the child has a poor appetite:

- A child with MAM and a poor appetite should be examined for the underlying cause and prescribed appropriate medication. If required they may be transferred to another higher level health facility with additional diagnostic equipment and/or appropriate medical staffing.
- A child with SAM and poor appetite should be transferred to hospital for inpatient care for SAM and treated as a medical emergency.

It is rare (but possible) that a child with MAM may lose appetite because the physiological ability to adapt to reduced food intake or disease process is lost more quickly than the anthropometric severity would suggest. If no clear cause for the lack of appetite is diagnosed at lower level health facilities the child should be admitted to an inpatient unit for further assessment.

Following the assessment of the child using anthropometry, clinical signs and testing for appetite, the child can be triaged and treated appropriately according to the severity of the condition. Figure 5 below indicates the algorithm to decide on the correct treatment.

**FIGURE 5  ALGORITHM FOR DIAGNOSIS AND TRIAGE OF CHILDREN 6-59 MONTHS WITH ACUTE MALNUTRITION**

* If no facilities for the outpatient department of SAM exist refer all children with SAM to an inpatient unit
ASSESSMENT OF ACUTE MALNUTRITION IN CHILDREN AGED LESS THAN 6 MONTHS

Infants aged less than 6 months are highly susceptible to acute malnutrition and should be screened routinely during any contact with the health facility and by CHWs in the community. The assessment of these infants is different from older children for MUAC and WFH/L;

- MUAC cannot be used in children aged less than 6 months
- WFH/L can only be used in children with a length greater than 45cm
- Oedema is assessed in the same way as for older children

Infants aged less than 6 months may present to the health facility because they are sick or not the mother feels unable or unwilling to breastfeed and the child is not gaining weight. If the infant presents at any visit and has any IMCI danger sign they should be referred to hospital immediately for further assessment.

During the visit to the health facility the infant should be weighed and an assessment of breastfeeding made. If the infant is too weak to suckle effectively, the infant should be referred to inpatient care for SAM immediately. If the infant appears to be breastfeeding, a full assessment should be made of feeding practices and counselling on exclusive breastfeeding given [see annexes 3-7, Section 1]. A follow up counselling session should be arranged for the following week and the infant weighed again. If the child does not gain weight since the first visit, the child should be referred to the inpatient unit for SAM.

Except using WFH/L it is not possible in this age group to classify acute malnutrition as being moderate or severe. There is no appetite test since RUSF and RUTF are unsuitable for infants aged less than 6 months and are not used in this age group.

The goal of treatment in these cases is to intervene early in the progress of malnutrition if the child is not gaining weight as expected and to re-establish exclusive breastfeeding whenever possible. If breastfeeding is not possible the child will be treated with therapeutic milk until cure and the mother taught the safe preparation and use of formula milk at home.

TABLE 5 CRITERIA FOR REFERRAL OF INFANTS AGED LESS THAN 6 MONTHS TO INPATIENT SAM TREATMENT

<table>
<thead>
<tr>
<th>Age</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate Acute Malnutrition</td>
</tr>
<tr>
<td>MUAC: Do not use</td>
<td></td>
</tr>
<tr>
<td>WFH/L: Less than -2Z to -3Z scores*</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>Oedema is absent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Assess WFH/L if infant is more than 45cm</td>
</tr>
<tr>
<td></td>
<td>Infant is too weak to suckle effectively</td>
</tr>
<tr>
<td></td>
<td>Infant is not gaining weight despite breastfeeding counselling</td>
</tr>
<tr>
<td></td>
<td>Visible severe wasting</td>
</tr>
</tbody>
</table>
ASSESSMENT OF ACUTE MALNUTRITION IN PREGNANT AND LACTATING WOMEN

The assessment of acute malnutrition for pregnant and lactating women (PLW) is done using MUAC only. Weight for height is not used as this is an unreliable indicator in these groups. The eligibility criteria for this group is indicated in table 6 below.

The aim of treatment for PLWs is to supplement the woman’s diet if she becomes acutely malnourished to prevent low birth weight of the infant on delivery and to provide nutrition during the first six months of the infant’s life while the woman is exclusively breastfeeding.

Unlike other treatments given to children, there are no discharge criteria based on anthropometry. The woman once eligible for support receives the rations until the infant reaches 6 months of age.

TABLE 6 CRITERIA FOR ACUTE MALNUTRITION IN PREGNANT AND LACTATING WOMEN

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women</td>
<td>From the 2nd Trimester</td>
</tr>
<tr>
<td>Lactating Women</td>
<td>Breastfeeding infant aged less than 6 months</td>
</tr>
</tbody>
</table>

MUAC < 23cm

ANNEX 8 MEASURING MUAC FOR CHILDREN AGED 6 TO 59 MONTHS
Ensure a MUAC tape with the correct cut-off points is used. Discard any others.
- RED MUAC less than 11.5cm Indicates SAM
- YELLOW MUAC 11.5 to less than 12.5cm Indicates MAM
- GREEN MUAC equal or greater than 12.5cm Normal

Remove the child’s clothing to expose the left arm
Identify the mid-point of the left arm between the tip of the shoulder and tip of the elbow
Mark the position of the mid-point with a marker pen or keep the finger over the location
Wrap the MUAC tape around the mid-point of the left arm
Ensure the tape lies comfortably against the skin with no gaps (too loose)
Ensure the tape is not pinching the skin of the arm even slightly (too tight)
Take the reading where the arrow on the tape indicates Figure 6 below

FIGURE 6  PICTURE INDICATING CORRECT MEASUREMENT OF MUAC READING AT THE ARROW

Annex 9  Measuring Weight

Weight can be measured using a Salter-type hanging spring scale (as is commonly found in the field) or an electronic scale (e.g. SECA scale or UNISCALE) which enables a child to be measured in the mother/caregiver’s arms.

Hanging Spring (Salter) Scale

A 25 kg hanging spring scale accurate to 100g should be used. In the field setting, the scale is hooked to a tree, a tripod or a stick held by two people. In a clinic, it is attached to the ceiling or a stand. The important factors here are that when being weighed, the child should be hanging freely without touching other objects and that the scale should be able to be read at eye level.

The child should be weighed naked and ideally a separate room to allow privacy should be used. If clothing is worn it must be the absolute minimum (light underwear only). A misdiagnosis of weight can adversely affect the classification of malnutrition and subsequent treatment.

How to use the Salter Scale: (see figure 7 below)
1. Before weighing the child, take all his/her clothes off.
2. Zero the weighing scales (i.e., make sure the arrow is at zero (with the weighing pants attached)
3. Place the child in the weighing pants/hammock
4. Hang the child in the weighing pants from the scale ensuring the child is not touching any objects
5. Read the child’s weight. The arrow should be steady and the weight/scale should be read at eye level
6. If the child is very agitated, the arrow may move considerably. Either wait until the child is calm or take an average weight which is between the two extremes.

7. Record the weight in kg and to the nearest 100 g (e.g., 6.4 kg).

Considerations:
- Make sure the child is safely in the weighing pants or hammock with one arm in front and one arm behind the straps to help maintain balance, hanging upright.
- In cold climates ensure the weighing area is heated and the child is undressed for the minimum time.

The scale should be checked daily against a known weight. To do this, set the scale to zero and weigh objects of known weight (e.g., 1, 2, 5 and 10kg). If the measure does not match the weight to within 100 grams, the scale must be recalibrated or the scale should be replaced.

How to use the SECA / UNISCALE (see figure 8 below):

1. Turn on the scale. Cover the solar panel for 2 seconds. When ‘zero’ appears, the scale is ready.
2. The mother should remove her shoes. The weighing assistant should hold the infant / child
3. Ask the mother to stand in the middle of the scale, feet slightly apart, and remain still
4. Remind the mother to stay still on the scale until told the weighing is complete
5. With the mother remaining still on the scale and her weight displayed, zero the scale by covering the solar panel for 2 seconds. The scale should now read zero with the mother standing alone
6. Tell the mother to remain still and gently hand the naked infant / child to the mother
7. The baby’s weight appears on the display. Record the weight being careful to read the numbers correctly
8. If the child is aged 2 years or able to stand still the child may be weighed alone on the scale.

FIGURE 7 MEASURING WEIGHT WITH A HANGING SCALE
Mother's weight alone. Zero the scale Baby's weight appears on display.

ANNEX 10 MEASURING HEIGHT

To increase accuracy and precision, two people are always needed to measure length and height.

Children aged 2 years or able to stand correctly are measured standing up, while those under 2 or unable to stand correctly are measured lying down. If the age is difficult to assess, children at least 87 cm tall (using WHO 2006 growth standards) are measured standing, and those less than 87 cm are measured lying down.

If children age 2 or older or at least 87 cm tall are measured lying down, 0.7 cm is subtracted from the measurement.

For children aged 2 Years or able to stand or with a height of equal or greater than 87 cm

1. The child's shoes are removed.
2. The child is placed on the height board, standing upright in the middle of the board with arms at his/her sides.
3. The assistant firmly presses the child's ankles and knees against the board while the measurer holds the child's head straight.
4. The child's head, shoulders, buttocks and heels should be touching the board, and his/her feet should be close together.
5. The measurer positions the sliding board and takes the measurement to the nearest 0.1 cm.
6. The measurer announces the measurement, and the assistant repeats it for verification and records it on the anthropometric form or health card.
For Children aged less than 2 Years or unable to stand or less than 87 cm tall

1. The height board is placed flat/horizontal on the ground.
2. The child’s shoes are removed.
3. The child is gently placed on his/her back on the middle of the board, facing straight up with arms at his/her sides and feet at right angles.
4. The assistant holds the sides of the child’s head and positions it on the board.
5. While holding down the child’s ankles or knees, the measurer moves the sliding board up against the bottom of the child’s feet and takes the measurement to the nearest 0.1 cm.
6. The measurer announces the measurement, and the assistant repeats it for verification and records it on the anthropometric form or health card.
FIGURE 10  MEASURING LENGTH

### WEIGHT FOR HEIGHT REFERENCE CARD (WHO, 2006)

<table>
<thead>
<tr>
<th>Boys' weight (kg)</th>
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ANNEX 12  CLASSIFICATION OF NUTRITIONAL OEDEMA

To assess oedema: Firm pressure should be applied to both feet simultaneously for a period of 3 seconds (counting “one thousand ONE, one thousand TWO, one thousand THREE”). If oedema is found in the feet, this is repeated on the lower legs and hands. Assess periorbital oedema visually; do not put pressure around the eyes.

Look and feel for a pit in each foot. Oedema in the feet only is classified as mild (+1) oedema.

If there is no oedema in the feet, STOP. Nutritional oedema always spreads from the feet upwards.

If oedema is present in the feet look for oedema in the lower legs. Use the same technique as for the feet checking both sides. Bilateral pitting oedema in the feet AND the lower legs is classified as moderate (+2) oedema.

If oedema is present in the feet and lower legs, check the hands. Use the same technique. If there is oedema in the feet, lower legs and hands this is also classified as moderate (+2) oedema.

If moderate oedema is diagnosed, check for oedema around the eyes (periorbital oedema). Do not press on the eyes to look for pitting. If there is oedema around the eyes this is classified as severe (+3) oedema. Children with +3 oedema are at high risk of mortality and are always treated in inpatient care.
SECTION 3: COMMUNITY OUTREACH

This section contains the following sub-sections:

- Coverage and Access
- Sensitisation
- Screening
- Timeliness of Referral
- Compliance with Treatment
- Boosters and Barriers to Access and Coverage
- Monitoring and Evaluation of Community Outreach

Community Outreach is an essential aspect of service delivery in an integrated approach to the management of acute malnutrition. While good clinical practice will give good care to the individual it is the outreach component of service delivery which maximises the public health impact of the treatment and ensures the highest possible cure rates are achieved.

The goals of community outreach are:

1. Maximise Coverage and Access
2. Maximise the timeliness of treatment
3. Maximise compliance with treatment

COVERAGE & ACCESS

Coverage refers to the proportion of children or PLWs who require treatment for acute malnutrition that are actually receiving it. Example: If we look to see what the coverage of treatment for SAM is in an area we would identify how many cases there were and ask how many of them receive treatment. If there are 50 cases of in a village and 30 of those cases are in treatment the coverage would be:

\[
\text{Coverage} \% = \frac{\text{# cases of SAM being treated}}{\text{Total # cases of SAM found}} \times 100\% = \frac{30}{50} \times 100\% = 60\%
\]

This is a very simple example of. During treatment, a child who was SAM (MUAC was less than 11.5cm, may now be recovering and is no longer identified as SAM (e.g. MUAC = 12.0 cm) in our survey but who is still under treatment and has not yet been discharged cured. This case is being treated by the service and should be included as part of the coverage estimate. In this case the treatment coverage would be;

\[
\text{Coverage} \% = \frac{\text{# cases of SAM being treated} + \text{number of recovering cases (non-SAM) under treatment}}{\text{Total # cases of SAM found} + \text{number of recovering cases (non-SAM) under treatment}} \times 100\%
\]

NB: The figure for the number of cases recovering is included on the bottom line of the equation.

Example: In our survey of a village we find 50 cases of SAM and 30 of those cases are being treated (but are still identified as SAM). We also find 10 cases that are under treatment and recovering but no longer identified as SAM (Non-SAM).

\[
\text{Coverage} \% = \frac{30 + 10}{50 + 10} \times 100\% = \frac{40}{60} \times 100\% = 67\%
\]
**HOW IS HIGH COVERAGE ACHIEVED?**
High coverage can be achieved through:

- The community understanding what malnutrition is and the importance of seeking treatment
- The community knowing that an effective treatment is available close to home
- Understanding and reducing any barriers which may prevent access to treatment
- Effective, systematic screening for malnutrition in the community and health facility
- The effective follow up of absentees and defaulters and their return to treatment

In the absence of knowledge about malnutrition and its treatment, most carers will present to a private doctor (or sometimes the Mullah) because the child is sick (usually with some illness other than malnutrition). One of the activities for community outreach services is to give *sensitisation* about acute malnutrition. However sensitisation alone is not enough, to achieve high coverage there must be systematic case finding through *screening* activities.

**SENSITISATION**
Sensitisation of the community aims to raise the awareness of malnutrition as a public health issue, to enable carers to understand the causes of malnutrition and to identify malnutrition in their own children. In many communities in Afghanistan belief in spiritual or other causes may delay access to proper treatment (increasing the risk of morbidity and mortality as well as cost of treatment and clinic caseloads). Sensitisation strategies should provide simple and clear messages about malnutrition.

The sensitisation strategy should seek to understand how information is passed from person to person in the community. This may be through formal channels such as local political, traditional or religious leaders or informal channels such as community gatherings (e.g. weddings), particularly those where women gather. While female carers take a primary interest in child care it is also important to gain consent and support of their male relatives for the IMAM approach to treatment.

The sensitisation message should include information on screening which will be done in the community by the CHW using a MUAC tape and checking for oedema. When a CHW makes a referral the child or woman should attend the health facility as soon as possible; the earlier treatment is started the more likely it is there will be a successful outcome and the more cost effective it will be for the service. Information regarding what is given for treatment, how long the treatment will take and the importance of staying in treatment until cure is reached should be included in the message. An example of a sensitisation meeting plan and an example sensitisation message are given in *annexes 13 and 14* respectively. This should be modified and added to for each different context.

Ultimately sensitisation should achieve:

- An understanding of malnutrition and its effects in the general community
- An awareness of the existence of locally available treatment free of charge
- Encourage proper and timely health seeking behaviour (to the health centre)
- Adherence to treatment schedules until full cure is achieved
SCREENING

Screening is also called *case finding* and refers to activities which are done so as to identify cases of acute malnutrition. This includes screening in the community using MUAC and checking for oedema and screening in the health facility which may include weight for height in addition to MUAC and oedema. Ideally, cases are found through screening in the community and identified at an early stage of acute malnutrition, however, if this does not happen the child will often present at the health facility because the child is sick. It is important that screening is done in both community and the health facility.

SCREENING IN THE COMMUNITY

CHWs perform a variety of activities at community level and case finding for malnutrition in the community should be integrated with these other community activities. Except in emergencies or evaluation of service coverage there is rarely a need for separate case finding activities. Screening with weight for height is rarely a feasible option at community level. Using MUAC and checking for oedema for children 6-59 months is both quick and simple and takes less than 1 minute per child. It is important to also assess children aged less than 6 months for signs of oedema, visible severe wasting or where the carer reports the child is not breastfeeding well.

Where CHWs / CHSs have been trained in Community IMCI (C-IMCI) any child or infant who shows any danger signs should be referred immediately.

Women who are pregnant or are lactating and breastfeeding an infant aged less than 6 months should also be screened using MUAC and referred to the health facility if found to be acutely malnourished.

<table>
<thead>
<tr>
<th>TABLE 7 SCREENING ACTIVITIES FOR CHWS IN THE COMMUNITY</th>
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<tr>
<td><strong>Infants less than 6 months</strong></td>
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<td>Visible severe wasting</td>
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<tr>
<td>Oedema</td>
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<tr>
<td>Not breastfeeding well</td>
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**NB:** The local health facility should establish clearly which cases are to be referred. In some places not all services for the treatment of children with MAM, SAM or PLWs with acute malnutrition will be available. If treatment services for acute malnutrition are NOT available, it may still be useful to give counselling or medical treatment at the local health facility or onward referral to a higher level health facility.

House to House case finding

House to house screening is an intensive method and involves going to every house in a village to do screening. It can be used during vaccination or similar campaigns where a house to house methodology is used routinely. At each house the CHW would identify any child aged 0 to 59 months or any PLW and screen them according to the criteria above.

Active Adaptive case finding

This technique is often used in coverage evaluations. The aim is to use key informants to identify a case of malnutrition:
- Establish a case definition for the cases you are looking for e.g.
  - Child 6-59 months with MUAC less than 11.5cm or bilateral oedema
  - Child aged < 6 months with oedema or visible severe wasting
  - Child 6-59 months being treated for malnutrition
- Notify the relevant village authorities of your activities
- Identify a key informant (do not use a CHW as the first informant!)
- Show photographs and / or describe cases you are looking for
- Find the first case
- Ask the carer of the first case if they know other children with this condition
- Continue with this until no more cases are identified
- Ask other key informants to assist (can be TBA, village pharmacist etc.)
- When no more cases can be found, ask for the CHW to assist in case finding
- Continue until all cases are found in the area being screened

The CHW should not be the primary informant. This is because there may be bias towards cases they have already referred to the clinic. This may leave other cases unidentified and may bias the estimate of coverage upwards. When identifying cases that are already under treatment, always be sure to verify the finding;

- Ask to see the ration of RUSF or RUTF (the child may be in a different treatment)
- Ask to see the ration card to verify attendance at the clinic

The intention is to identify every case in a given area. It can be decided that the case finding has been exhaustive when all areas of the village have been screened and key informants do not identify any new cases, any referrals to children with SAM are back to children already identified.

**Mass Screening**

A popular but unreliable way of finding cases is to do a mass screening. When this is organised with the consent and cooperation of village leaders, it will allow the efficient screening of a large majority of individuals in a community.

A problem with this methodology is that children who are sick or weak may be left at home or stigma may prevent the carer from allowing the child to be seen in public. Additional efforts must be made to identify individuals who did not attend, either using the village register or asking the village leader and other carers if they know of anyone not screened. This methodology should not be used for coverage estimations.

**Growth monitoring**

Growth monitoring programmes assess children using the criteria of Weight for Age (WFA). This cannot be used to assess children for acute malnutrition. WFA is a composite index; a child who is underweight for age, may be that way because of stunting, wasting or some combination of both. It is important therefore to systematically screen every child attending growth monitoring using MUAC and checking for oedema.

The systematic screening of children should include children who are normal weight for age and not only those who are noted to be underweight. WFA is unreliable in detecting acute malnutrition, only screening children who are underweight will miss 50%* of cases with wasting.

* Sensitivity of WFA in detecting SAM is approximately 50.3%
**Other community based resources**

Carers will often attend a private doctor, pharmacy or go to see the Mullah when the child becomes sick. This provides opportunities for additional case finding. These individuals should be targeted during any sensitisation campaigns and could also be provided with a MUAC tape and taught to check for oedema. Sensitisation should include information regarding what services are available locally and when these services can be accessed.

A tally sheet for case finding at community level is provided in annex 15. This may be modified for use in case finding for any specific group using a good case definition. In the example provided, the tally sheet is for SAM cases in children 6-59 months.

**Screening at the health facility**

All children attending a service at the health facility should be screened systematically using MUAC and checking for oedema. Using signs such as 'looking thin or weak' ‘distended belly’ or ‘hair colour’ are extremely unreliable. In particular cases of MAM will be missed preventing early access to treatment which is more cost effective as well as preventing deterioration to SAM or worse.

**Timeliness of referral and treatment**

Timeliness refers to the need to identify and refer cases early in the progression of acute malnutrition. Identifying cases early means that the likelihood of a successful treatment outcome is increased and the cost of treatment is decreased. Timeliness is in part achieved through screening and in part through linkages between services. For example, if treatment for MAM or SAM is available at a nearby higher level outpatient health facility the child should be referred to that health facility for treatment. If there is no outpatient department for MAM available in the local health facility, they should be referred for IYCF counselling, the treatment of minor medical ailments and checking of vaccination status at the local health facility. At this stage further deterioration (which increases the risk of mortality) can be prevented. This is much better for the overall health of the child and the cost of treatment than waiting until the child is SAM and referring to the inpatient unit when the child would then be at a very high risk of mortality

A child identified as having SAM should be referred to IPD-SAM immediately if no outpatient service is available locally.

**Compliance with treatment**

Protocols for the treatment of acute malnutrition described in these guidelines can achieve nearly 100% cure rates if children are treated appropriately. The only way to improve on child survival and the reduction of morbidity therefore is to implement an effective approach to community outreach in order to establish high coverage AND keep the child / mother under treatment.

Low cure rates for outpatient treatment are usually due to two factors:

- **Default**
  
  Definition: A child/mother who fails to attend 3 consecutive planned follow up visits. The child should be marked as absent on the first two absences and marked as a defaulter on the third absence.
Non cure
Definition: A child who has not reached discharge criteria after 4 months of outpatient treatment. Before discharge as non-cured the child must have been referred for treatment in aIPD-SAM. A child who is still SAM must NOT be discharged as non-cured.
And a child who has not reached discharge criteria after 2 months of in-patient treatment defined as a non-cured.

Default: Ideally, a CHW should be requested to follow up a case who is absent from treatment. Home visit forms are provided in annexes 17 & 18. Annex 17 provides a simple feedback form while annex 18 provides a more detailed assessment form. The form should be completed and returned to the health centre.

Returning the child to treatment after the first absence will minimise the defaulting from treatment. If a case does default, the CHS/CHW should be requested to follow up the case to identify the reasons for default and encourage a return to treatment. In some instances the child / woman may have died during treatment. It is important to ensure that any deaths during treatment are identified and reported correctly.

Non cure (the child is no longer acutely malnourished but has not reached discharge criteria) may occur for 2 reasons;
- Undiagnosed illness (e.g. TB or HIV)
- Non-compliance with treatment (e.g. sharing or selling of RUSF / RUTF)

The protocols described for outpatient care [section 4] guide the health staff in the proper management of cases when the child appears to be not responding to treatment. Ideally, if protocols are followed, there should be almost no non-cured cases.

1: term of stabilization centre/TFU has been changed to IPD-SAM in this guideline.

Boosters and Barriers to access and coverage

Boosters or barriers are factors which may affect coverage positively or negatively respectively.

Boosters to access and coverage
Activities which improve coverage may be termed 'boosters' to access and coverage. Typical boosters include the following;
- The provision of good and reliable standards of service
- Good relationship between staff (at community and health facility level) and beneficiaries
- The support of community leaders in promoting the service
- Effective sensitisation of the community to the IMAM approach
- Effective and timely case-finding
- Strong referral networks (from community to health facilities and vice versa)
- Systematic follow up of absentees in the community by CHWs as requested

The Community Health Supervisors (CHS) and CHW play a vital role in maximising the coverage of treatment through sensitisation, case finding and follow up. Regular meetings...
between the CHS / CHW and facility staff should be held and information exchanged relating to the provision of services.

**Barriers to Access and Coverage**

Barriers to accessing treatment for malnutrition (and other conditions) vary according to context. In Afghanistan this will also vary according to province / district. Some of the more important issues are:
- Lack of knowledge in the community about malnutrition
- Lack of systematic screening in communities and health centres
- Opportunity costs
- Absence of male relative
- Cost of treatment (sensitisation messages should emphasise that treatment is free of charge)
- RUTF / RUSF stock-outs
- Geographical barriers
- Climate / seasonal factors
- Agricultural duties (especially in planting & harvesting seasons)

Each factor identified in any given community must be considered carefully so as to understand the precise nature of the barrier and how it may be overcome. It may be possible to overcome many barriers through subtle changes in service delivery. This may require some thought and creativity in:
- Changes in the way sensitisation is given
- Changes in the way screening activities are done
- Allowing less frequent visits to the health centre for check up
- Further decentralisation of services to communities

Changes in service delivery should always be done in consultation with senior MoPH technical staff at Provincial and National level.

**Monitoring & Evaluation of Community Outreach**

Several tools exist for collecting information and evaluating the activities done as part of community outreach. Some of these tools are included in the annex at the end of this section and are intended to complement the tools already used by the CHS.

**Regular coordination meetings**

Meetings between the CHS and CHW and other clinical staff form a regular part of the routine. These meetings should be used for a two-way exchange of information about the screening and treatment of cases. The types of information to be shared include:
- Referral of cases from community to health facility
- Timeliness of referral and treatment
- Case mapping
- Defaulter tracing
- Referral rates to IPD-SAM

The information to be shared and their significance is further described below.
**Referral of cases**

A referral slip can be used by the CHW when identifying the child in the community. This should be in two parts. One is completed and given to the carer when a case is identified and the other half returned to the CHS. When the mother attends the clinic for treatment, the referral slip should be collected and placed in a small bag or envelope. The other half should be retained by the CHW or given to the CHS.

During weekly meetings, the CHW (or CHS) and facility staff can compare the slips to see which if any cases did not attend after referral. These can then be followed up by the CHW.

**Timeliness of treatment**

The timeliness of referral and treatment can be estimated by assessing the “MUAC on referral” or the “MUAC at the start of treatment”. The timeliness should be assessed depending on which services are available in the catchment area. MUAC cannot be used as an indicator for children less than 6 months.

For infants less than 6 months: The number of carer sof infants referred for and being given IYCF counselling can be compared with the number of children requiring transfer to IPD-SAM*.

Referral rate to IPD-SAM = \[
\frac{\text{Number of infants aged less than 6 months referred for IPD-SAM}}{\text{Number of carers of infants < 6 months receiving IYCF counselling}}
\]

A high referral rate to IPD-SAM means either the infants are being identified too late for counselling to be effective or that the counselling being given to carers is ineffective.

For children aged 6 to 59 months: The assessment of timeliness depends on which services are available. A tally sheet [annex 19] should be completed at the health facility to identify the MUAC on admission to treatment.

Ideally where treatment for MAM is available if cases are identified and referred early (EARLY REFERRAL) there should be no SAM cases. Where Outpatient Department for MAM is available, any child found to be SAM may be considered a LATE REFERRAL.

Where outpatient department for MAM exist

- EARLY REFERRAL = MUAC between 11.5 cm and 12.5 cm
- LATE REFERRAL = MUAC less than 11.5cm OR oedema is present

Where Outpatient department for SAM exist (no MAM treatment is available)

- EARLY REFERRAL = MUAC is between 11.5cm and 10.5cm or oedema is grade 1+
- LATE REFERRAL = MUAC is <10.5cm or oedema is grade 2+ or 3+

*: term of stabilization centre/ TFU has been changed to IPD-SAM in this guideline.

For pregnant and lactating women

- EARLY REFERRAL = MUAC is between 21 cm and 23 cm
- LATER REFERRAL = MUAC is less than 21cm

Cases coming to treatment late in any of these groups indicate that there is some barrier to access which may be a lack of knowledge, poor health seeking behaviour or ineffective
sensitisation and screening (both in facility and community). The underlying reasons should be investigated and resolved so as to improve coverage. Ideally the number of late referrals is zero.

**Case mapping**

When a case is identified and attends treatment, this can be noted on a tally sheet which identifies which village the case came from. The tally sheet lists all of the villages in the catchment area of the health centre.

At the monthly meeting (or at least once every quarter) the tally sheet should be reviewed. If there are villages where a lot of cases are coming it may mean;

- Malnutrition is a particular problem in that area
- Malnutrition is the same everywhere but good case finding is happening in some villages
- Villages with no cases may indicate ineffective sensitisation and screening

The findings can be correlated with those of the referral / attendance and timeliness of treatment to give further evidence of the effectiveness of case finding in those areas.

A tally sheet can be used when a case is eligible for treatment. The tally of admissions for case mapping (annex 15) may be completed on admission or during supportive supervision visits and help to assess the coverage of the treatment service.

**Defaulter tracing**

When a child is absent from one or two clinic visits, this should be notified to the relevant CHS / CHW for follow up and encourage a return to treatment. When a child is absent from treatment for 3 consecutive visits they are discharged from treatment as a defaulter.

Every defaulter should be followed up for 2 reasons;

- To encourage a return to treatment
- To identify the reason for default

A simple questionnaire (annex 16) can be completed quickly by the CHW or CHS and identifies the reasons why the child does not attend treatment. This information can be collated at the monthly meetings (at least every quarter) to identify barriers to access.

**Referral rate to IPD-SAM**

The development of complications related to malnutrition can be a sign of late referral for treatment. The referral rate from outpatient care to IPD-SAM may be calculated;

Referral rate = \( \frac{\text{Number of cases referred to Inpatient Department for SAM}}{\text{Total number of cases treated at the health centre}} \)

This proportion can be multiplied x 100 to give a percentage.

In a stable situation with a well-established service and good community outreach, the referral rate may be as low as 5%. At the start-up of a service the referral rate may be as high as 20% since it might be expected that untreated cases will be found in the community. Over time and with effective case finding this percentage should drop. Increases in the percentage over time should be investigated further.
Coverage assessments

Coverage assessments can be made using a variety of techniques. Some of these are beyond the scope of these guidelines and require specialised training. Some methods are simpler but combined with information gathered using the tools described above can be powerful in identifying successes or problems with service coverage. Examples of coverage assessments are:

- LOQAS: Lot Quality Assurance Sampling
- SLEAC: Simplified LOQAS evaluation of Access and Coverage
- SQUEAC: Semi-Quantitative Evaluation of Access and Coverage

LOQAS assessments are used in other assessments of health service provision. With a modification of sampling methods to include Active Adaptive Case finding this can also be used to assess the coverage of services to treat malnutrition. This method allows the classification of coverage rather than providing a percentage, however combined with other routine data gathered using the tools mentioned above, this gives a powerful indication of the service coverage and the reason underlying good or poor coverage.

Semi-structured Interviews with beneficiaries and communities

When the CHW or CHS visits a community or has the opportunity to talk to carers of children or PLWs receiving treatment, a simple question guide can be used to gather information from the perspective of the recipient of the treatment. A guide to semi-structured interviews is given in annex 20. The list of questions is not exclusive and additional questions should be asked to investigate issues further.

STANDARDS OF COVERAGE

The standard of coverage achieved by a treatment service depends on many factors. The purpose of assessing coverage should be to understand two things;

1. To assess the quantitative coverage (by estimating a percentage or classification for coverage)
2. To assess the underlying factors so that coverage may be improved

It is important to always aim to improve coverage no matter what result is obtained from any assessment of coverage. Table 8 below indicates the standards of coverage for integrated MAM / SAM treatment services in Afghanistan.

<table>
<thead>
<tr>
<th>TYPE OF TREATMENT</th>
<th>MINIMUM STANDARD OF COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Greater than 70 %</td>
</tr>
<tr>
<td>Rural</td>
<td>Greater than 50 %</td>
</tr>
<tr>
<td>Camp</td>
<td>Greater than 90 %</td>
</tr>
</tbody>
</table>

INTERNATIONAL STANDARDS OF COVERAGE

Internationally standards of coverage are defined by SPHERE standards. These are standards which are defined for Non-Governmental Organisations (NGO’s) when implementing nutrition programmes. The standards are MINIMUM required standards. While these standards were not designed for non-emergency contexts they provide a useful guide for evaluating programme performance.
ANNEX 13       SENSITISATION MEETING PLAN

Introduction

1. Malnutrition
   - Discussion about malnutrition. Discussion about their perception of malnutrition, the perceived causes and characteristics/visible signs of malnutrition in children in their communities.
   - Discussion about the available treatment for malnourished children, and the obstacles for accessing it.

2. Ministry of Health services for acute malnutrition
   - Introduction to the service – new service of the Ministry of Health with the support of UNICEF. Starting date: ______________
   - Alternative to inpatient treatment for severe cases of malnutrition.
   - Target group: children under 5 year of age identified as acutely malnourished
   - Easier access by bringing the service closer to the home and treating the child in his home. Mothers only have to go to specific sites every 1 to 2 weeks.

3. Admission of children less than five years of age into treatment
   - Midwives in the BHC and CHC and CHWs are trained to measure children and refer them for treatment, and give counselling to the mothers
   - Identification process: Mothers bring their children to the midwives/CHWs for measurement. They are trained to measure children with MUAC (Mid-upper arm circumference). [Show MUAC tape] and check for swelling of the feet. If the child is aged less than 6 months the MUAC tape cannot be used; other signs are used to identify the acute malnutrition
   - Referral: Children identified as acutely malnourished according to MUAC or oedema are given the appropriate treatment. The mother will go home with the recommended treatment for her child. She will have to come back to the health centre every 2 weeks with the child to monitor his recovery and continue the treatment for as long as necessary. This usually about 6 to 7 weeks
   - Treatment: Routine medical treatment (antibiotics/ deworming) and provision of RUSF / RUTF.
   - Show samples of RUSF / RUTF: medicinal treatment specially produced for the child to gain wait quickly and recover, RUSF / RUTF are Halal

4. Sensitisation message
   - Emphasis on the role of the Mullahs as community leaders to disseminate the information about the treatment available. Key authorities/points of dissemination in the district, possible support to the project, source of trust for the people.
   - Source of information about the treatment. It is very important to let the parents about the programme and where to go, what to do if a child is very thin or has swelling of the feet
   - Discussion about possible ways for the Mullahs to disseminate information

5. Conclusion
   - Discussion: To clarify misunderstandings about activities, target group, etc.
   - Key points as reminder:
     1) The treatment is a Ministry of Health service supported by UNICEF to treat acutely malnourished children less than 5 years of age
     2) Children need to be brought to the midwives and CHW for screening,
     3) Treatments are available from the health centre,
4) It is close to home, and children can stay at home to be treated
5) The role of the community in disseminating the information and making sure that every family knows how to access this service.

ANNEX 14 EXAMPLE OF SENSITISATION MESSAGE

IMPORTANT MESSAGE TO ALL MOTHERS AND FAMILIES WITH CHILDREN LESS THAN 5 YEARS

New medicine is now available at [Name of Health Facility] for the treatment of children between six months and five years who are becoming thin, or who have developed swelling in the feet. The families with such children now do not have to stay in the hospital for a long time but can treat the child while he/she continues to live at home the rest of the family.

Malnutrition can result from not eating the right type of foods, even if the child has plenty to eat. It can also occur during or following any illness in children – even a minor illness.

This is a free treatment, to be eligible, the child has his upper arm measured to see if he/she is thin and feet checked to see if they have begun to swell. If the arm is too thin, the child visits the closest clinic to their home, where the measure is repeated and if correct his/her family is provided with a supply of the medicinal food called **RUTF [use local term]**.

The arm measurement is done with a tape similar to the measuring tape used by tailors. The measurement can be done by many types of person. Some people are being trained in communities around the health facilities in the use of the tape, so that the measure can even be done by a person who is known to the child or his family.

While the child is receiving treatment, the staff will also assess your child for vaccinations, to ensure the child is receiving the proper foods needed for growth, promote hygiene practices or for other services.

If you know a child who is very thin, or whose feet have started to swell, let his parents or guardians and any pregnant or lactating mothers know about this new treatment. They can ask in their neighbourhood for the name of the person trained in the arm measurement, or they can go direct to the health facility. You may attend the health facility at any time the health facility is open for treatment.

In some areas a treatment may also be available to mothers who are thin if they are visibly pregnant or have a breastfeeding child less than 6 months of age. Measurement of the arm using the tape will determine who is eligible for treatment.

**NB: THIS MESSAGE IS AN EXAMPLE ONLY AND MUST BE MODIFIED TO SUIT THE LOCAL CONTEXT**
ANNEX 15 TALLY SHEET FOR CASE MAPPING

Tally of Admissions for case mapping

Name of Health Centre:

Period: From _____________ to ____________ (complete new sheet every 3 months)

<table>
<thead>
<tr>
<th>Name of village / sub-village</th>
<th>Tally of admissions</th>
<th>Name of village / sub-village</th>
<th>Tally of admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
ANNEX 16    QUESTIONNAIRE FOR DEFAULTER TRACING

Defaulter questionnaire

1. When was your child enrolled in the treatment?

2. Why did you take your child in the treatment?

3. When did you stop taking your child to the health centre?

4. Why did you stop taking your child to the health centre?
   (List reasons):
   a.
   b.
   c.
   d.
   e.

5. Would you return your child to the clinic to receive treatment?
   • Yes
   • No (If no, why not?)
     a.
     b.
<table>
<thead>
<tr>
<th>Reason for Home Visit:</th>
<th>Absent Y / N</th>
<th>Default Y / N</th>
<th>Dead Y / N</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration No.</td>
<td>Date</td>
<td>Site</td>
<td>Community</td>
<td>District</td>
</tr>
<tr>
<td>Child’s name</td>
<td>Age</td>
<td>Family name</td>
<td>Name of caregiver</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td>Date of visit</td>
<td>Findings</td>
<td></td>
</tr>
<tr>
<td>Outreach Worker’s Name</td>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RETURN THIS FORM TO THE HEALTH FACILITY WHEN COMPLETED
# ANNEX 18 HOME VISIT QUESTIONNAIRE

**Name of person conducting the Home visit:**

__________________________________________________________

**Name of Health Center:**

__________________________________________________________

**Date of Visit:**

________________________

**Child’s Name:**

___________________________________________

**Village:**

__________________________________________________________

### Feeding

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the ration of RUTF present in the home?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If not, where is the ration?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the available RUSF/RUTF enough to last until the next visit?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the RUTF being shared or eaten only by the sick child?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is food other than RUSF/RUTF given to the sick child?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes, what type of food?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ List the foods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many times per day is the sick child given RUSF/RUTF?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many times per day is the sick child given food to eat?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does someone help/encourage the sick child to eat?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Encourage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Take the child to the hospital or seek health workers’ advice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Feeding the child in small amounts but more often</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ None of the above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the child currently breastfeeding? (for children &lt; 2yrs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes, how often</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is safe water available?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is water given to the child when eating RUSF/RUTF?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Caring

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are both parents alive and healthy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who is the primary care giver?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the sick child clean?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

56
### Health

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the household’s main source of water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there soap in the house?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the caregiver and child wash hands with soap before the child is fed?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is RUSF/RUTF covered and free from flies?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>What action does the caregiver take when the child has diarrhoea?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️ Increases breastfeeding frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️ Increases amount of other fluids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️ Continue giving the child but frequent amounts of RUTF or other foods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️ If child shows signs of dehydration, mother continues breastfeeding, giving ORS and seeking immediate medical care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✔️ None of the above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Food Security

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the household currently have food available?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the most important source of income for the household?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
ANNEX 19 TALLY SHEET FOR MUAC ON REFERRAL AT HEALTH CENTRE LEVEL

Name of Health Centre

Period: From ___________________ to ___________________ (complete a new sheet every 3 months)

<table>
<thead>
<tr>
<th>MUAC on admission</th>
<th>MUAC on admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.5</td>
<td>9.9</td>
</tr>
<tr>
<td>12.4</td>
<td>9.8</td>
</tr>
<tr>
<td>12.3</td>
<td>9.7</td>
</tr>
<tr>
<td>12.2</td>
<td>9.6</td>
</tr>
<tr>
<td>12.1</td>
<td>9.5</td>
</tr>
<tr>
<td>12.0</td>
<td>9.4</td>
</tr>
<tr>
<td>11.9</td>
<td>9.3</td>
</tr>
<tr>
<td>11.8</td>
<td>9.2</td>
</tr>
<tr>
<td>11.7</td>
<td>9.1</td>
</tr>
<tr>
<td>11.6</td>
<td>9.0</td>
</tr>
<tr>
<td>11.5</td>
<td>8.9</td>
</tr>
<tr>
<td>11.4</td>
<td>8.8</td>
</tr>
<tr>
<td>11.3</td>
<td>8.7</td>
</tr>
<tr>
<td>11.2</td>
<td>8.6</td>
</tr>
<tr>
<td>11.1</td>
<td>8.5</td>
</tr>
<tr>
<td>11.0</td>
<td>8.4</td>
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<tr>
<td>10.9</td>
<td>8.3</td>
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<tr>
<td>10.8</td>
<td>8.2</td>
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<tr>
<td>10.7</td>
<td>8.1</td>
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<td>10.6</td>
<td>8.0</td>
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<td>10.5</td>
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<td>10.3</td>
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<td>10.2</td>
<td></td>
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<tr>
<td>10.1</td>
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<tr>
<td>10.0</td>
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</tr>
</tbody>
</table>

If the MUAC recorded is less than 8cm, check the measurement again. A MUAC less than 8cm is very rare. It usually occurs because the MUAC tape is pulled too tight.
ANNEX 20 SEMI-STRUCTURED INTERVIEW QUESTIONNAIRES

Questionnaire for village/religious leaders and key community figures

KNOWLEDGE OF IMAM
1. Are you aware of any nutrition service at your local clinic?
2. Who told you about it?
3. When did you hear about it?
4. What do you know about it?
   a. Target children?
   b. Admission criteria?
   c. Treatment given?
   d. Free treatment?
   e. What days is treatment available?
   f. Identification of children?

ROLE / SENSITISATION
5. Have you told others about the service? How? When?
   a. Usual channels/message dissemination?

BARRIERS
6. Are you aware of any children who need treatment but are unable to access services?
   a. What stops them coming? (distance/family/beliefs/other)
   b. How could we reach these children/encourage them to attend?

KNOWLEDGE OF CASES
7. Do you know any children receiving treatment?
   a. What can you tell me about them?
8. Do you know any children who have defaulted/stopped coming?
   a. Why is that?
   b. How can we encourage them to return for treatment?

COMMUNICATIONS
9. Do you know who the volunteer is for this service?
   a. When did you last see them?
   b. What do they do? (frequency and organisation of activities)
10. Have you had any feedback from the volunteer/clinic staff/MoH officials about the service?
    a. Do you know what the results are?

PERCEPTIONS OF IMAM
11. What are people saying about IMAM?
    a. Do you think most people are aware of it?
    b. What do they understand about it?
12. What do you think of the service?
    a. What do other key community figures think of it?

IMPROVEMENTS
13. How can we improve the service?
14. Do you have any messages for those running the service?
Questionnaire for carers of children or PLWs receiving treatment

UNDERSTANDING OF MALNUTRITION
1. When did you first notice that your child was unwell?
   a. What was wrong with them?
   b. What symptoms did they have?
   c. What did you do?

OUTREACH
2. How did you first hear about the service?
   a. Who told you?
   b. Have you heard about it from any other source since?
   c. Who is telling people about it in your settlement/area?
3. What did you hear about it?
4. What made you come?

TIME
5. How long has your child been attending the clinic?

EXPLANATION FROM NURSE
6. What did the clinic staff tell you about your child’s condition?
7. What were you told about the treatment?
8. What do the staff call the treatment?
   a. What do you call the treatment?

OTHER CASES/CASE REFERRAL
9. Do you know of other children who have the same problem but who are not attending the clinic?
   a. If yes, why not?
10. Have you told anyone else to bring their child to the clinic?
    a. Why/why not?

DISTANCE
11. How far is it from your home to the clinic?
    a. How do you get here? Walk/transport?
    b. How long does it take?
    c. Determine the farthest distance travelled
12. Do you have any other reason to come to this clinic/this place?

STANDARD OF SERVICE
13. What do you think of the service?
    a. What are the strengths/good things?
    b. What are the weaknesses?
    c. What could be improved?
14. How long do you usually wait before the nurse sees you?
15. How much time do you spend with the nurse?
    a. How do the staff treat you?
    b. Have you ever been scolded? Why?
16. Have you always received the correct supply of treatment sachets?
    a. Have there been any shortages on any week?
    b. Have you ever not received the full amount / or received something else instead?

ABSENCE/DEFAULTING
17. How easy is it for you to come every week?
    a. What makes it difficult for you to come/what stops you from coming sometimes?
18. Do you know of any children who have stopped coming?
    a. Why is that?
    b. How can we encourage these children to return and continue the treatment?

PERCEPTION OF IMAM/FEEDBACK
19. What are people saying about the service in your settlement/area?
20. Have you any messages you want us to give to the people running the service?
SECTION 4: OUTPATIENT TREATMENT OF ACUTE MALNUTRITION FOR CHILDREN AGED 6 TO 59 MONTHS

This section contains the following sub-sections

- Pathways to Treatment
- Assessment and Treatment in the Outpatient Department
- Follow-up after Discharge
- Reporting
- Standards of Service
- Monitoring & Supportive Supervision

Acute malnutrition in children is associated with an increased risk of mortality above other children who are not acutely malnourished. Moderate Acute Malnutrition (MAM) increases the risk of death 1.5 times while Severe Acute Malnutrition (SAM) increases risk by 4 to 20 times. This section describes the assessment of the child with acute malnutrition, the treatment which is given and the monitoring required for the service. This section should be read in conjunction with section 2 on assessment and triage and section 3 on Community Outreach.

PATHWAYS TO TREATMENT

Children should be screened in the community as part of the Community Outreach services. If screening in the community has not detected cases, these children may present to the health facility because the child is sick. All children attending a health facility for any reason should be systematically screened using MUAC and checking for oedema. In addition, where staffing and caseloads allow more time for patient assessment, weight for height should also be checked. Systematic screening in the community and at the health facility is essential to establish high coverage and maximise the public health impact of treatment.

ASSESSMENT IN THE OUTPATIENT DEPARTMENT (OPD)

The assessment of the child aged 6 to 59 months follows the normal medical assessment done in IMCI with the addition of screening for malnutrition. This screening should be done as a high priority in the assessment BEFORE and decisions on treatment are made. This is because when SAM is diagnosed, the medical treatment of some conditions is different from that of a MAM or normally nourished child.

1) Ask the mother what the problems are

2) Assess the child for general danger signs
   a) Manage the airway and treat convulsions
   b) Complete the assessment immediately
   c) Assess MUAC (children 6-59 months only) and check for oedema
   d) Classify the acute malnutrition (if present) according to table 9 below
   e) Treat the child to prevent low blood sugar
   f) Complete a referral slip (annex 23) and refer to hospital as an emergency
TABLE 9 CLASSIFICATION OF SAM FOR CHILDREN AGED 6 TO 59 MONTHS

<table>
<thead>
<tr>
<th>Age</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moderate Acute Malnutrition</td>
</tr>
<tr>
<td>6 to 59 months</td>
<td>MUAC: 11.5 cm to Less than 12.5 or WFH/L: Less than -2Z to -3Z scores and Oedema is absent</td>
</tr>
</tbody>
</table>

NB: A child diagnosed with MAM and any general danger sign or other complication should be referred to the hospital for admission to the paediatric ward. A child with SAM and any general danger sign or other complication should be referred to the Inpatient Department of SAM.

If no general danger signs or other complications are identified and the child is diagnosed with MAM or SAM:

3) Assess the degree of acute malnutrition and perform the appetite test [Section 2]

4) Ask about the main symptoms cough, fever, diarrhoea, infection
   a) Does the child have cough or difficult breathing?
   b) Does the child have diarrhoea?
   c) Does the child have fever?
   d) Does the child have an ear problem?
   e) Check for anaemia
   f) Check for vitamin A deficiency
   g) Check immunisations

5) Decide if the child can be treated as an outpatient

TABLE 10 ELIGIBILITY CRITERIA FOR OUTPATIENT TREATMENT OF ACUTE MALNUTRITION FOR CHILDREN AGED 6 TO 59 MONTHS

<table>
<thead>
<tr>
<th>Outpatient treatment for MAM</th>
<th>Outpatient treatment for SAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUAC: 11.5 cm to Less than 12.5 or WFH/L: Less than -2Z to -3Z scores or Oedema is absent AND Appetite for RUSF No medical complications</td>
<td>MUAC less than 11.5cm or WFH/L less than -3 Z scores or Oedema + 1 or + 2 AND Appetite for RUTF No medical complications</td>
</tr>
</tbody>
</table>
Prescribe routine medications

**Routine Medications for Children Aged 6 to 59 Months with SAM/MAM**

Routine medication for children with acute malnutrition is given to all cases. All children with MAM/SAM receive deworming. In addition children with SAM receive routine antibiotics. The preferred first line medication for SAM is amoxicillin. If amoxicillin is not available, cotrimoxazole may be given as a second choice antibiotic until supplies of amoxicillin are available. Routine medications for MAM and SAM are described in table 11 & 12 respectively.

Additional medications may be prescribed for associated conditions with some important differences to treatment that would be given to a child without acute malnutrition (see below).

**Table 11 Routine Medications for Children Aged 6 to 59 Months with MAM**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Age</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mebendazole</td>
<td>12 – 23 months</td>
<td>250 mg</td>
<td>Single dose on admission</td>
</tr>
<tr>
<td></td>
<td>24 months or older</td>
<td>500 mg</td>
<td>Single dose on admission</td>
</tr>
</tbody>
</table>

**Table 12 Routine Medicines for Children Aged 6 to 59 Months with SAM**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Age</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin</td>
<td>6 – 11 months</td>
<td>125 mg</td>
<td>3 x daily for 7 days on admission</td>
</tr>
<tr>
<td></td>
<td>12 – 59 months</td>
<td>250 mg</td>
<td></td>
</tr>
<tr>
<td>Mebendazole</td>
<td>12 – 24 months</td>
<td>250 mg</td>
<td>Single dose on admission</td>
</tr>
<tr>
<td></td>
<td>Older than 24 months</td>
<td>500 mg</td>
<td>Single dose on admission</td>
</tr>
</tbody>
</table>

**Differences in medicine prescription for children 6 to 59 months with acute malnutrition**

Care should be used in prescribing some medicines for SAM (for example, Iron, Zinc or ORS).

- **Vitamin A:** Do not give vitamin A except if measles or severe diarrhoea is diagnosed or if there are signs of vitamin A deficiency (xerophthalmia, Bitot spots)
- **Oral Rehydration Solutions (ORS / ReSoMal):** ORS or ReSoMal is not required for cases of mild or moderate dehydration when the child is eating RUSF or RUTF. All of the electrolytes present in ORS are also contained in the RUSF/RUTF in the correct proportions; the child needs only to drink plenty of water to satisfy thirst. If the child is severely dehydrated, this is a danger sign and the child should be transferred to the inpatient unit (MAM to paediatric ward, SAM to inpatient treatment for SAM)
- **Iron / Folate:** These micronutrients are not required for the treatment of mild or moderate anaemia if the child is eating RUSF / RUTF. Iron and folate are both present in RUSF/RUTF in the correct proportions to treat anaemia. Additional iron may be
particularly dangerous for children with SAM as it may increase the risk of serious infection

- **Zinc:** Do not give additional Zinc to treat diarrhoea when the child is eating RUSF/RUTF. There is enough zinc in the RUSF/RUTF to provide a therapeutic dose. Additional zinc may displace the absorption of copper from the RUSF/RUTF and make the child more prone to infection due to immunosuppression

- **Multiple Micronutrient Tablets:** Do not give multiple micronutrient tablets to children eating RUSF/RUTF. The proportions of micronutrients in RUSF/RUTF are carefully formulated to provide the correct amounts of macronutrients and micronutrients required for recovery. Additional micronutrient tablets will disturb this balance.

Where there is a need for other medicines to treat illnesses (in addition to the routine medications for MAM /SAM) other medications such as antibiotics, anti malarials may be given according to IMCI protocols.

7) Prescribe RUSF / RUTF

**PRESCRIPTION OF RUSF FOR CHILDREN AGED 6 TO 59 MONTHS WITH MAM**

The prescription of RUSF for cases with MAM is the same for all children irrespective of weight

**TABLE 13 PRESCRIPTION OF RUSF FOR CHILDREN AGED 6 TO 59 MONTHS WITH MAM**

<table>
<thead>
<tr>
<th>Weight of the child, kg</th>
<th>Packets per week</th>
<th>Packets per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>All children</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

**PRESCRIPTION OF RUTF FOR CHILDREN AGED 6 TO 59 MONTHS WITH SAM**

RUTF is prescribed for SAM and the amount given varies according to weight.

**TABLE 14 PRESCRIPTION OF RUTF FOR CHILDREN AGED 6 TO 59 MONTHS WITH SAM**

<table>
<thead>
<tr>
<th>Weight of the child, kg</th>
<th>Packets per week</th>
<th>Packets per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-3.9</td>
<td>11</td>
<td>1.5</td>
</tr>
<tr>
<td>4.0-4.9</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>5.0-6.9</td>
<td>18</td>
<td>2.5</td>
</tr>
<tr>
<td>7.0-8.4</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>8.5-9.4</td>
<td>25</td>
<td>3.5</td>
</tr>
<tr>
<td>9.5-10.4</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>10.5-11.9</td>
<td>32</td>
<td>4.5</td>
</tr>
<tr>
<td>Greater than 12kg</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>

8) Give the carer the key messages for using RUSF / RUTF

**KEY MESSAGES FOR USING RUSF / RUTF**

1. The mother should continue to breastfeed the child on demand until the child reaches at least 2 years old. Breast milk provides better nutrition than other foods. For a child aged 6 months and older, complementary foods must be introduced alongside continued breastfeeding.
2. Give counselling regarding age appropriate complementary feeding for children aged 6 months and older [see annexes 3-7, section 1]

3. RUSF/RUTF is a treatment for MAM/SAM children only. It should not be shared with other members of the family. Always give RUSF/RUTF before other family foods.

4. Wash the child’s hands and face with soap before feeding. Keep RUSF/RUTF clean and covered.

5. When eating RUSF/RUTF the child should be given breast milk or sips of drinking water in between each mouthful. DO NOT MIX WITH WATER or other fluids before eating.

6. The child should continue to eat RUSF even if they have diarrhoea. The child should eat MORE food and fluids during illness.

7. Malnourished children get cold quickly. Always keep the child covered and warm.

8. Return to the health facility whenever the child’s condition deteriorates or if the child is not eating sufficiently.

9. Make sure the mother/caregiver knows when to return for follow up.

DECISION TOOL FOR WHEN THE CHILD SHOULD RETURN FOR FOLLOW UP
A child with MAM or SAM will return to the health facility for follow up every 1 or 2 weeks. The decision for when the child must return should be based on clinical criteria although other factors may also be considered on a case by case basis at the discretion of the health staff.

The clinical factors which determine when the child should return are:

- Appetite: The child may pass the appetite test however some children require more encouragement than others. Children eating RUSF/RUTF only with encouragement should be observed more closely
- Clinical status: In addition to the routine medications the child may require medications (e.g. antibiotics or anti-malarial) for other conditions which need closer observation. These cases may need more observation than those with no illness or only minor illness.
- Weight gain: During follow up visits the child who is not gaining weight or losing weight should be followed more closely. If the child continues to not gain weight they will require inpatient care

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2 weekly attendance</th>
<th>1 weekly attendance</th>
<th>Transfer to hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appetite for RUSF</td>
<td>Good appetite</td>
<td>Eats only with encouragement</td>
<td>No appetite</td>
</tr>
<tr>
<td>Clinical status</td>
<td>No illness or only minor illness</td>
<td>Illness requiring antibiotic treatment</td>
<td>IMCI danger sign</td>
</tr>
<tr>
<td>Weight gain</td>
<td>Gained weight on follow up</td>
<td>*Static weight for 3 visits or losing weight for 2 visits</td>
<td>*Static weight for 5 visits or losing weight for 3 visits</td>
</tr>
</tbody>
</table>

* A child not gaining weight or losing weight should be followed up at home by a CHW or CHS and a home visit form [annex 18] completed and returned to the health centre.
9) Complete the documentation
   a) Assign the patient registration number and write in all documentation / registers
   b) Complete the treatment card for MAM / SAM children [annex 21]
   c) Complete the ‘ration card’ for the carer [annex 22]
   d) Ask carer to repeat the instructions for medications and using RUSF / RUTF
   e) Check immunisations are up to date
   f) Refer to other services as required (e.g. Ante natal clinic, TB clinic, IYCF counselling)
   g) Tell the carer when to return for follow up

**FOLLOW UP CARE AT THE HEALTH FACILITY DURING TREATMENT**

During follow up visits to the health facility during treatment;

- Measure the MUAC
- Check for oedema
- Measure the weight
- If WFH/L was used for the eligibility criteria measure height (every 4 weeks)
- Make an IMCI clinical assessment
- Record all data on the treatment card
- Assess the weight gain of the child (or weight loss for oedema cases)
- Assess if child is improving or not and investigate possible causes
- Prescribe any medicines as required for diagnosed illnesses
- Request a CHW/CHS home visit if required
- Assess if child has reached discharge cured criteria
- Give additional counselling as required based upon the assessment
- Complete the information on the treatment card including any home visits or counselling given
- Complete the information on the carers ‘ration’ card
- Tell the carer when to return for follow up

During follow up assessments of the child it is expected to see the child gain weight (or if the child has oedema, the oedema should decrease and the child loses weight); and the MUAC increase accordingly. The child’s clinical condition should also improve. To guide the management of the child’s progress, ‘action protocols’ describe the action to be taken in various circumstances. The two main actions to be taken are to request a home visit to be made by the CHS/CHW or to transfer the child to an inpatient unit.

**TABLE 16 ACTION PROTOCOLS FOR CHILDREN AGED 6 TO 59 MONTHS DURING TREATMENT OF MAM / SAM**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Request CHS/CHW home visit</th>
<th>Refer child to inpatient care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oedema</td>
<td>Oedema has not reduced after 3 visits</td>
<td>Oedema is increasing</td>
</tr>
<tr>
<td>Weight</td>
<td>Weight does not increase for 3 visits</td>
<td>Weight does not increase for 5 visits</td>
</tr>
<tr>
<td></td>
<td>Weight loss for 2 consecutive visits</td>
<td>Weight loss for 3 consecutive visits</td>
</tr>
<tr>
<td>Clinical status</td>
<td>Repetitive minor illnesses</td>
<td>Any medical complication</td>
</tr>
<tr>
<td>Not responding to treatment</td>
<td>Has not reached cured criteria after 3 months of treatment</td>
<td></td>
</tr>
</tbody>
</table>
Weekly review of outpatient MAM / SAM service for absentees

At the end of each week the health staff should assess whether all of the children have returned for treatment as requested. The names of absentees should be given to the CHS / CHW at the weekly meeting and requested to follow up the child in the community and ensure their return to treatment as soon as possible. The systematic follow up of absentees should be conducted so as to minimise defaulting.

**OTHER CATEGORIES ELIGIBLE FOR TREATMENT FOR MAM / SAM**

**TABLE 17 OTHER CATEGORIES OF CHILDREN AGED 6 TO 59 MONTHS ELIGIBLE FOR TREATMENT FOR MAM**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned Defaulter*</td>
<td>Child / PLW has previously defaulted and has returned to treatment</td>
</tr>
<tr>
<td>Transfer from other Outpatient Department for MAM**</td>
<td>Patient treatment transferred from another health centre</td>
</tr>
</tbody>
</table>

* A return defaulter must satisfy the admission criteria in order to be eligible for treatment. If a defaulter returns to the programme after a period of 6 months, they should be admitted as a new case of acute malnutrition

** The carer may use the ration card to obtain treatment at any health centre where outpatient department for MAM are offered. The child should be registered as a transfer and not a new admission

**TABLE 18 OTHER CATEGORIES OF CHILDREN AGED 6 TO 59 MONTHS ELIGIBLE FOR TREATMENT FOR SAM**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other new admissions</td>
<td>Carer refuses inpatient care despite advice</td>
</tr>
<tr>
<td>Returned Defaulter</td>
<td>SAM child has previously defaulted and has returned to outpatient care</td>
</tr>
<tr>
<td></td>
<td>(the child must meet admission criteria to be re-admitted)</td>
</tr>
<tr>
<td>Transfer from inpatient care</td>
<td>From inpatient care after stabilisation treatment</td>
</tr>
<tr>
<td>Transfer from other Outpatient Department for SAM</td>
<td>Patients moved in from another outpatient care facility/service</td>
</tr>
<tr>
<td>Transfer from treatment for MAM</td>
<td>MAM Child deteriorates and becomes SAM</td>
</tr>
</tbody>
</table>

**DISCHARGE CRITERIA FOR CHILDREN 6-59 MONTHS WITH ACUTE MALNUTRITION**

Discharges from treatment for both MAM and SAM follow the same criteria which are given below in table 19

NOTE: Before discharging clients, provide counselling for the mothers *(following page 19)*
An additional discharge criterion is applied for children receiving treatment for MAM. If during treatment they deteriorate and now become SAM the child is given outpatient treatment for SAM. If outpatient treatment for SAM is not available the child is transferred to an inpatient unit.

**TABLE 19 DISCHARGE CRITERIA FOR CHILDREN AGED 6 TO 59 MONTHS FROM TREATMENT FOR MAM / SAM**

| Cured | For a child admitted by MUAC  
|       | MUAC equal or greater than 12.5 cm for 2 consecutive visits  
|       | OR  
|       | For a child admitted by WFH/L  
|       | WFH/L equal or greater than -2Z scores for 2 consecutive visits  
|       | AND  
|       | No oedema for at least 2 weeks  
|       | AND  
|       | Child is clinically well  
| Defaulted | Absent for 3 consecutive visits for treatment  
| Died | Died (of any cause) during the course of treatment for MAM  
| Non-cured | Has not reached discharge criteria after 4 months of treatment  
| Transfer to other outpatient facility | Child is transferred to another outpatient treatment facility to continue the same treatment for MAM/SAM  
| Transfer to inpatient | Child is transferred to inpatient unit  

**TABLE 20 OTHER EXIT CRITERIA FOR CHILDREN AGED 6 TO 59 MONTHS WITH MAM**

| Transfer to Outpatient Department for SAM | MUAC Less than 11.5 cm  
|                                          | or  
|                                          | WFH/L Less than -3Z scores  
|                                          | or  
|                                          | bilateral pitting oedema  

**FOLLOW UP AFTER DISCHARGE FROM MAM / SAM TREATMENT**

The child being treated for acute malnutrition has usually suffered some combination of nutritional deficit and / or infection which arise as a result of many factors [see the section on causes of malnutrition]. In order to continue healthy growth and prevent relapse follow up care is **ALWAYS** required. Depending on services available locally, referral of the child / family to one or more of the following should be considered.

- On-going IYCF / nutrition counselling
- Referral to diversified local food production and demonstration
- Enrolment in a growth monitoring programme
- Referral to Well Baby Clinic
- Referral to any other relevant social service programme
REPORTING

Admissions and discharges for treatment for MAM and SAM are reported separately. Formats for the monthly reports are given in annexes 24 & 25 respectively. Each month the discharge outcomes for MAM / SAM are calculated and submitted with the report. On electronic formats the monthly discharge outcomes are calculated automatically.

The bottom line of the equation for discharge outcomes is the total number of discharges from treatment.

Total discharges for MAM = Cured + died + Defaulted + Non-cured + Transfer to outpatient SAM
Total discharges for SAM = Cured + Died + Defaulted + Non-cured

TABLE 21 CALCULATION OF DISCHARGE OUTCOMES FOR MAM / SAM

<table>
<thead>
<tr>
<th>Percentage of discharge cured</th>
<th>= number of children cured that month x 100 total number of discharges from outpatient treatment that month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of discharge died</td>
<td>= number of children who died that month x 100 total number of discharges from outpatient treatment that month</td>
</tr>
<tr>
<td>Percentage of discharge defaulted</td>
<td>= number of children defaulted that month x 100 total number of discharges from outpatient treatment that month</td>
</tr>
<tr>
<td>Average length of stay</td>
<td>= total number of days of treatment for all discharged cured cases total number of discharged cured cases</td>
</tr>
</tbody>
</table>

Average weight gain

Average weight gain (AWG) is calculated separately for children with wasting and those with oedema. Treatment records for children discharged cured each month are separated into the wasting and oedema and the AWG calculated as below.

For cases admitted with wasting

First calculate the weight gain of each child discharged cured

\[
\text{Weight gain} = \frac{(\text{Discharge weight in g} - \text{Admission weight in g})}{\text{Admission weight in kg}} \times \frac{\text{Length of stay (in days)}}{1}\n\]

Weight gain from this calculation is expressed in g / kg / day

\[
\text{Average weight gain} = \frac{\text{Total weight gain of all wasted children discharged cured (expressed in g / kg / day)}}{\text{Total number of wasted children discharged cured}}
\]

For cases admitted with oedema

The weight gain for cases of oedema is calculated from the as the weight gain from the time all oedema has resolved until discharge.
Weight gain = \(\frac{\text{Discharge weight in g} - \text{Minimum weight in g}}{\text{Minimum weight in kg}}\) (in g /kg / day)

\[ \text{Time from minimum weight to discharge cured} \text{ (in days)} \]

Average weight gain = \(\frac{\text{Total weight gain of all oedematous children discharged cured}}{\text{Total number of oedematous children discharged cured}}\)

**Standards of service**

The standard of services for MAM and SAM can be assessed from the indicators calculated above for monthly reporting. Standards for each indicator are given in tables 22 & 23 below.

**TABLE 22 STANDARDS OF SERVICE FOR OUTPATIENT MAM TREATMENT SERVICES**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>MoPH standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure</td>
<td>greater than 75%</td>
</tr>
<tr>
<td>Default</td>
<td>Less than 15%</td>
</tr>
<tr>
<td>Died</td>
<td>Less than 3%</td>
</tr>
<tr>
<td>Average LOS</td>
<td>45 days</td>
</tr>
<tr>
<td>Average weight gain</td>
<td>Greater than 5g / kg / day</td>
</tr>
</tbody>
</table>

**TABLE 23 STANDARDS OF SERVICE FOR OUTPATIENT SAM SERVICES**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>MoPH standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure</td>
<td>greater than 75%</td>
</tr>
<tr>
<td>Default</td>
<td>Less than 15%</td>
</tr>
<tr>
<td>Died</td>
<td>Less than 10%</td>
</tr>
<tr>
<td>Average LOS</td>
<td>45 days</td>
</tr>
<tr>
<td>Average weight gain</td>
<td>Greater than 5g / kg / day</td>
</tr>
</tbody>
</table>

Where standards of service do not comply with the standards indicated in tables 22& 23 above, a narrative report should explain the reasons for the differences and what action is being taken to address the issues.

**MONITORING & SUPPORTIVE SUPERVISION**

Performance checklists for use in monitoring visits are included in the annex at the end of this section. Monitoring visits should be conducted every 3 months. A copy of the monitoring visit report should be submitted to the Provincial Nutrition Officer and to the Public Nutrition Department at national level.

When coverage assessments are available the effectiveness of the service can be assessed according to the following equation;

\[ \text{Effectiveness} = \text{Cure rate} \times \text{Coverage}^* \]

* Coverage should be evaluated using an accepted methodology. Indirect calculations of coverage derived from estimates of expected numbers of cases is not acceptable for evaluation purposes.
ANNEX 21  
TREATMENT CARD FOR OUTPATIENT MAM / SAM

<table>
<thead>
<tr>
<th>Details</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Name</td>
<td>Name of the patient, including both first and last names</td>
</tr>
<tr>
<td>Mother’s Name</td>
<td>Name of the mother or guardian of the patient</td>
</tr>
<tr>
<td>Age</td>
<td>Age of the patient</td>
</tr>
<tr>
<td>Date of Admission</td>
<td>Date when the patient was admitted</td>
</tr>
<tr>
<td>Date of Discharge</td>
<td>Date when the patient was discharged</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>Weight of the patient</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>Height of the patient</td>
</tr>
<tr>
<td>Admission Criteria</td>
<td>Criteria for admission</td>
</tr>
<tr>
<td>Other Problems</td>
<td>Additional medical conditions that may affect treatment</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>Rate of breathing, measured in breaths per minute</td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td>Body temperature, measured in degrees Celsius</td>
</tr>
<tr>
<td>Urea</td>
<td>Level of urea in the blood</td>
</tr>
<tr>
<td>Creatinine</td>
<td>Level of creatinine in the blood</td>
</tr>
<tr>
<td>Platelet Count</td>
<td>Number of platelets in the blood</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>Level of hemoglobin in the blood</td>
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<tr>
<td>Total Leucocyte Count</td>
<td>Number of white blood cells in the blood</td>
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<tr>
<td>Differential Count</td>
<td>Type of white blood cells in the blood</td>
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<tr>
<td>Stools / Day</td>
<td>Number of stools per day</td>
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<tr>
<td>Diarrhoea</td>
<td>Presence of diarrhoea (yes/no)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Presence of vomiting (yes/no)</td>
</tr>
<tr>
<td>Cough</td>
<td>Presence of cough (yes/no)</td>
</tr>
<tr>
<td>Sputum</td>
<td>Presence of sputum (yes/no)</td>
</tr>
<tr>
<td>Fever</td>
<td>Presence of fever (yes/no)</td>
</tr>
<tr>
<td>Rash</td>
<td>Presence of rash (yes/no)</td>
</tr>
<tr>
<td>Skin Changes</td>
<td>Type of skin changes</td>
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<td>Other Problems</td>
<td>Additional medical conditions that may affect treatment</td>
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**Dosage**

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<td>Acetaminophen</td>
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<td>Paracetamol</td>
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<tr>
<td>Ibuprofen</td>
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<td>Caffeine</td>
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<td>Magnesium</td>
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<td>Sodium</td>
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<td>Vitamin K</td>
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**Discharge**

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<th>Details</th>
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<td>Discharge Date</td>
<td>Date when the patient was discharged</td>
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<tr>
<td>Reason For Discharge</td>
<td>Reasons for discharge</td>
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**Notes**

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<th>Notes</th>
<th>Description</th>
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(Treatment card reverse side)

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<tr>
<th>Name</th>
<th>Week</th>
<th>Date</th>
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<th>REG. No</th>
<th>Name</th>
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<td>3</td>
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<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Height (cm)</td>
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<tr>
<td>Weight</td>
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</tbody>
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## Symptoms

<table>
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<th>Days</th>
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<td>Fever</td>
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<td>Cough</td>
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## Medical History

<table>
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<td>Temperature</td>
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<td>Respiratory Rate</td>
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<td>Dehydration</td>
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<td>Anemia</td>
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<td>Skin Infection</td>
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<td>Number of packets</td>
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</table>

**Outcome**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Notes</th>
</tr>
</thead>
</table>

**Name of Examiner**

Note: ** absent, D = default (3 consecutive absences), T = transfer to inpatient care, R = refused inpatient care, X = died**
### ANNEX 22 RATION CARD FOR MAM/SAM SERVICES

<table>
<thead>
<tr>
<th>Remarks on Treatment Provided</th>
<th>Week number</th>
<th>Date</th>
<th># packets RUSF/RUTF</th>
<th>WFHL Z score</th>
<th>Oedema</th>
<th>Weight (kg)</th>
<th>MUAC (cm)</th>
<th>N/C</th>
<th>Remark</th>
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<tr>
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</tr>
</tbody>
</table>
Annex 23 Referral slip to/from Inpatient Department for SAM

Name ______________________  Age:____  Sex:___  Registration number:____________________

Address: _____________________________  Date of admission to OPD-SAM:_________________

MUAC_________  Oedema (circle)  +1  +2  + 3  WH Z score (if used)_________

Transfer from: ________________________________  (Name of Health Centre/ OPD-SAM)

Transfer to: ________________________________ (Name of Hospital)

Date of transfer:__________  Reason (circle): No appetite  Medical Complications  Other:__________

Treatment given:__________________________

Name ______________________  Age:____  Sex:___  Registration number:____________________

Address: _____________________________  Date of admission to OPD-SAM:_________________

MUAC_________  Oedema (circle)  +1  +2  + 3  WH Z score (if used)_________

Transfer from: ________________________________  (Name of Health Centre/ OPD-SAM)

Transfer to: ________________________________ (Name of Hospital)

Date of transfer:__________  Reason (circle): No appetite  Medical Complications  Other:__________

Treatment given:__________________________
ANNEX 24 REPORTING FORMAT FOR MAM OUTPATIENT TREATMENT FOR CHILDREN 6 TO 59 MONTH AND PREGNANT AND LACTATING WOMEN

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total at the beginning of the month (n)</th>
<th>WHI &lt; -2 to -3 z scores</th>
<th>MUAC &lt; 115 mm</th>
<th>MUAC &lt; 125 mm</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Refer In</th>
<th>Total Admissions</th>
<th>Exit</th>
<th>Total at the end of the month (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 6-23 M</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Children 24-59 M</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Pregnant women</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Lactating women</td>
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<td>0</td>
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<td>0</td>
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<td>#DIV/0!</td>
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<tr>
<td><strong>SPHERE and CMAM standards</strong></td>
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Average length of stay (ALS) and average weight gain (AWG) - only for Children Under 5

**D = (A + B) - C**

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Opening Balance</th>
<th>Quantity Received</th>
<th>Quantity Distributed</th>
<th>Closing Balance</th>
<th>Expected # of Patients</th>
<th>Quantity Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat/Four (kg)</td>
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<td>Oil (kg)</td>
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<td>Ration (kg)</td>
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<td>MNT (kg)</td>
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<tr>
<td>RUTF (kg)</td>
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<tr>
<td>Formula (ml)</td>
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**Weight gain = (Discharge weight in g - Minimum weight in g)/(minimum weight in Kgs x number of days between minimum weight and day of discharge)**

**A.W.G = Sum of weight gains (g/kg)/ Number of curds in the group (SFP cards)**

**A.L.S = Sum of length of stay (in days) / number of curds in the group (SFP cards)**
ANNEX 25 REPORTING FORMAT FOR SEVERE ACUTE MALNUTRITION

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>Implementing Agency</th>
<th>Type of program</th>
<th>HF Name</th>
<th>Health Facility Code</th>
<th>Report prepared by</th>
<th>Month\Year</th>
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### Management of Severe Acute Malnutrition Programme

#### Monthly Statistics Report Format

<table>
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<tr>
<th>Age Group</th>
<th>New Admissions</th>
<th>Exit</th>
<th>Total Cured</th>
<th>Total Deaths</th>
<th>Total Default</th>
<th>Total Non Cured</th>
<th>Total Transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total at the beginning of month</td>
<td>Deaths</td>
<td>Referrals</td>
<td>Return</td>
<td>defaults</td>
<td>Cured</td>
<td>Non Cured</td>
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<tr>
<td>&lt; 6 Months</td>
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<tr>
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</tbody>
</table>

#### Cured, Death, Default, Non Cured and Transfer Rates

- Total Cured: 80% + 5% + 15%
- Total Deaths: 80% + 5% + 15%
- Total Non Cured: 70% + 10% + 15%
- Total Transfers: D=(A+B+C)

#### Average Weight Gain (AWG)

<table>
<thead>
<tr>
<th>Average Weight Gain (AWG)</th>
<th>Rawamihor (Stunted)</th>
<th>Rawatomihor (Wasted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwasimihor (Stunted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marawamihor (Wasted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marawimihor (Wasted)</td>
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</tbody>
</table>

#### Average Length of Stay (ALS)

<table>
<thead>
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<th>Rawamihor (Stunted)</th>
<th>Rawatomihor (Wasted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwasimihor (Stunted)</td>
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<tr>
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<td>Marawimihor (Wasted)</td>
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#### Supply stock report and balance

<table>
<thead>
<tr>
<th>Item</th>
<th>Opening Balance</th>
<th>Quantity Received</th>
<th>Quantity Used</th>
<th>Closing Balance</th>
<th>Expected # of patients</th>
<th>Quantity Needed</th>
</tr>
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<tbody>
<tr>
<td>Food</td>
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</tr>
<tr>
<td>PFE (flour)</td>
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</tr>
<tr>
<td>RUTF (ready-to-use)</td>
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<td>RVS (reconstituted)</td>
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<td>SF (sustained)</td>
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</table>

**A.L.S.** = sum of length of stay (in days) / number of curds in the group.

**Weight Gain** = (discharge weight in g - minimum weight in g) / (minimum weight in kg x number of days between date of minimum weight and discharge day)

**A.W.G.** = sum of weight gains (g/kg/d) / number of curds in the group
### Annex 26 Performance checklist for Outpatient Department of MAM

**The Ministry of Public Health General**  
**Directorate of Preventive Medicine**  
**Department of Public Nutrition**

#### Identification

<table>
<thead>
<tr>
<th>SN</th>
<th>Questions</th>
<th>Answers</th>
<th>Remarks</th>
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</thead>
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<tr>
<td>q1</td>
<td>Date: Year ( )/ Month ( )/ Day ( )</td>
<td>MAM</td>
<td></td>
</tr>
<tr>
<td>q2</td>
<td>Location: Province ( )/ District ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q3</td>
<td>Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other ( ), HF ID: name:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Input indicators

| q4 | Are appropriate number of staff for OPD-MAM? | 1. No  
2. Yes | 0 doctor, 1 nurse, 1 Food distributor |
| q5 | Have Health facility staff received initial and refresher(every3-6months)training? | 1. No  
2. Yes | One week standard training according to MoPH guideline |
| q6 | Dose clear job description available for each staff member? | 1. No  
2. Yes | |
| q7 | Are feeding centre register book, maintained properly and regularly? | 1. No  
2. Yes | |
| q8 | Does HF staff review data and take action in weekly and monthly meeting? | 1. No  
2. Yes | |
| q9 | Is there water available for staff, beneficiaries and caretakers | 1. No  
2. Yes | |
| q10 | Is soap and water available for hand washing | 1. No  
2. Yes | |
| q11 | Are SFC rooms and courtyard clean(no litter, faces) | 1. No  
2. Yes | |
| q12 | Are latrines clean and sufficient in number for demand | 1. No  
2. Yes | |
| q13 | Are sufficient space and equipment available for efficient food preparation (including cleaning) | 1. No  
2. Yes | |
| q14 | Are shelves and floor free of food scraps/refuse | 1. No  
2. Yes | |
| q15 | Are measuring equipment accurate and checked daily | 1. No  
2. Yes | |
| q16 | Are equipment/ utensils washed and dried properly, and stored in clean, dry place | 1. No  
2. Yes | |

#### Process

| q17 | Do weight and height measure correctly | 1. No  
2. Yes | |
| q18 | Is anthropometric index calculate correctly and nutrition status correctly assess | 1. No  
2. Yes |
<table>
<thead>
<tr>
<th>Q</th>
<th>Question</th>
<th>1. No</th>
<th>2. Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>q19</td>
<td>Are admission and discharge criteria applied correctly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q20</td>
<td>Are routine medical administered on admission (clinical exam, vitamin A, measles vaccination, ferrous sulfate and folic acid, mebendazole)</td>
<td>1. No</td>
<td>2. Yes</td>
</tr>
<tr>
<td>q21</td>
<td>Is ration size meets MOPH protocol (nutrient quality and quantity)</td>
<td>1. No</td>
<td>2. Yes</td>
</tr>
<tr>
<td>q22</td>
<td>Are food commodities stored in clean, controlled area</td>
<td>1. No</td>
<td>2. Yes</td>
</tr>
</tbody>
</table>

### Output

<table>
<thead>
<tr>
<th>Q</th>
<th>Question</th>
<th>1. No</th>
<th>2. Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>q24</td>
<td>Is released ration appropriate according to the ration size and number of beneficiaries monthly?</td>
<td>1. No</td>
<td>2. Yes</td>
</tr>
<tr>
<td>q25</td>
<td>Are community agree with objectives/purpose/design of OPD-MAM</td>
<td>1. No</td>
<td>2. Yes</td>
</tr>
</tbody>
</table>

**Suggestion:**

* If not complete, please circle the item which is not available.

This checklist is filled in by the Supervisor/

Monitor: Name/ Signature:

Position: ________________________________

and witnessed or certified by the in-charge of the

health facility: Name/ Signature:

Position: ________________________________
## Monitoring Checklist for Outpatient Department of Severe Acute Malnutrition

### Identification

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer 1</th>
<th>Answer 2</th>
<th>Remarks</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>q1 Date: Year</td>
<td>Year( /Month/Day )</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q2 Location: Province</td>
<td>Province(/District)</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q3 Health Facility Type</td>
<td>1.PH, 2.DH, 3.CHC, 4.BHC, 5.SHC, 6.Other</td>
<td>HF ID:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Input Indicators

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer 1</th>
<th>Answer 2</th>
<th>Remarks</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>q4 Are there adequate staff in the OPD-SAM?</td>
<td>1. No 2. Yes</td>
<td>Doctor, 1 nurse, 1 cleaner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q5 Have health facility staff received training on management of severe acute malnutrition?</td>
<td>1. No 2. Yes, but not certificate 3. Yes, certificate</td>
<td>One week standard training according to MoPH guideline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q6 Is there at least one copy accessible MoPH guideline on management of severe acute malnutrition?</td>
<td>1. No 2. Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>q7 Are there IEC materials (posters, take home-brochures, flipcharts) on management of severe malnutrition available in the HF?</td>
<td>1. No 2. Yes, not appropriate/ Adequate 3. Yes, appropriate/ Adequate</td>
<td>Appropriate: Visible, readable, Adequate: enough for distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q8 Are there adequate number of forms and formats necessary for OPD-SAM?</td>
<td>1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete</td>
<td>Home treatment card, Follow-up card, Register book, W/H table(z-score)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q9 Is there the flow chart of operational guideline visible in the wall?</td>
<td>1. No, 2. Yes, but not appropriate 3. Yes appropriately</td>
<td>Appropriate: Visible, readable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q10 Are there adequate equipment for the center?</td>
<td>1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete</td>
<td>Baby scale, measuring board, Salter scale, MUAC tape</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q11 Are there enough supplies for management of severe malnutrition available in the health facility according monthly case load?</td>
<td>1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete</td>
<td>Plumpy-nut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q12 Are there enough pharmaceuticals available to treat severe malnutrition according monthly caseload?</td>
<td>1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete</td>
<td>Antibiotics and other necessary drugs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Process

**q13** Are the admission and discharge criteria followed correctly according to the protocol?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes, admission not discharge</th>
<th>3. Yes discharge not admission</th>
<th>4. Yes admission and discharge</th>
</tr>
</thead>
</table>

**q14** Do all counsellor have MoPH Certificate

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes, not adequate</th>
<th>3. Yes, adequate</th>
</tr>
</thead>
</table>

**q15** Does the doctor:

- **a** Make good interview of the mothers
  - 1. No
  - 2. Yes

- **b** Make complete clinical examination
  - 1. No
  - 2. Yes

- **c** Write the complete feeding prescription
  - 1. No
  - 2. Yes

- **d** Assess the appetite of the child correctly
  - 1. No
  - 2. Yes

- **e** Provide counseling.
  - 1. No
  - 2. Yes

**q16** Are the rooms' temperature adequate for malnourished children?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes = 27-30°C</th>
</tr>
</thead>
</table>

**q17** Are children weight and height measured and interpreted correctly?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes = According to z-score table</th>
</tr>
</thead>
</table>

**q18** Are the staff able to wash their hands with soap and water?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes</th>
</tr>
</thead>
</table>

**q19** Are mothers able to wash their hands with soap and water?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes</th>
</tr>
</thead>
</table>

**q20** Are children referred correctly to IPD-SAM?

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes</th>
</tr>
</thead>
</table>

## Output

**q21** Check there register for:

- **a** Average number of admission/day

- **b** Correct registration of clients according to the standard form

<table>
<thead>
<tr>
<th>1. No</th>
<th>2. Yes, but not appropriate</th>
<th>3. Yes appropriately</th>
</tr>
</thead>
</table>

- **c** Cure rate:

- **d** Defaulter rate

**q22** Are children’s filing system completed correctly?

<table>
<thead>
<tr>
<th>1. N</th>
<th>2. Y</th>
</tr>
</thead>
</table>

**Suggestion:**

*If not complete, please circle the item which is not available.*

This checklist is filled in by the

 Supervisor/Monitor: Name/Signature:

 Position:

 and or certified by the in-charge of health facility:

 Name/Signature:

 Position:
SECTION 5: OUTPATIENT TREATMENT OF ACUTE MALNUTRITION FOR PREGNANT & LACTATING WOMEN

This section contains the following sub-sections:

- Pathways to Treatment
- Assessment and Treatment
- Reporting
- Monitoring & Supportive Supervision

Acute malnutrition in pregnant women is associated with low birth weight of the new-born infant. This in turn is associated with a higher risk of post natal mortality for the infant. The aim of treatment for Pregnant and Lactating Women (PLW) who are identified as being acutely malnourished is to provide good nutrition during foetal development and for the first 6 months of the infant’s life while the mother is breastfeeding the infant. The supplementary ration is given through an Outpatient Department for MAM (OPD-MAM) at the health facility. Pregnant women with a normal weight before pregnancy require additional energy:

- 1st trimester 85 kcal / day
- 2nd trimester 285 kcal /day
- 3rd trimester 475 kcal / day

For lactating women the additional energy requirement for the first 6 months is:

- Well-nourished 500 kcal / day
- Under-nourished 675 kcal / day

Source: FAO / WHO 2004

PATHWAYS TO TREATMENT

Women diagnosed as being pregnant or having a breastfeeding infant aged less than 6 months should be screened systematically at the health facility in the ante natal clinic, Mother & Child Health (MCH) clinic or OPD. Screening in the community by a CHW should be done at each known contact with a PLW. Any PLW with a MUAC less than 23 cm should be referred to OPD-MAM.

ASSESSMENT

The PLW should be assessed according to normal clinical protocols. In addition the mother should also be assessed and followed up through Midwifery services, Mother and Child, or Well Baby clinics. In any clinical setting the mother’s nutritional status should be assessed throughout pregnancy and post-delivery. In addition to the routine ante natal and post natal checks for pregnant and lactating women perform the following:

- Check the MUAC
- If MUAC is less than 23 cm enrol PLW for OPD-MAM
- Check the weight (for pregnant women)
- Record the assessment on the clinic record
- Record the ration given on the mother’s ration card

10 Term of T-SFP has been changed to OPD-MAM in this guideline.
Refer to midwifery or post-delivery clinical services (if not already done)
Refer to IYCF counselling
Ensure the mother’s registration number is recorded on **ALL** documentation

**ELIGIBILITY CRITERIA**
The eligibility criteria for treatment of acute malnutrition for PLW are given in table 24 below.

**TABLE 24  ELIGIBILITY CRITERIA FOR PLW WITH ACUTE MALNUTRITION**

<table>
<thead>
<tr>
<th>New admissions</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant Women</td>
<td>From the 2nd trimester</td>
</tr>
<tr>
<td>Lactating Women</td>
<td>Breastfeeding infant aged less than 6 months</td>
</tr>
<tr>
<td></td>
<td>MUAC less than 23 cm</td>
</tr>
</tbody>
</table>

Other categories of PLW eligible for treatment are given in table 25 below.

**TABLE 25 OTHER CATEGORIES OF PLW ELIGIBLE FOR TREATMENT OF ACUTE MALNUTRITION**

| Returned Defaulter* | PLW has previously defaulted and has returned to treatment |
| Transfer from other health facility | PLW under treatment transferred from another health centre |

* A PLW defaulting from treatment may return to treatment at any time before the infant reaches 6 months

**ROUTINE MEDICATIONS FOR PLW WITH ACUTE MALNUTRITION**
The routine medications for PLW with acute malnutrition are given in table 26 below.

**TABLE 26 ROUTINE MEDICINES FOR PLW WITH ACUTE MALNUTRITION**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Micronutrient Tablet</td>
<td>One tablet</td>
<td>Daily until discharge</td>
</tr>
</tbody>
</table>

Other medications should be given according to national protocols. Since multiple micronutrient tablets (MNT) are being given there is no need for additional supplementation of Vitamin A, Iron Folate or other micronutrient tablets.

**NUTRITIONAL TREATMENT FOR PLW WITH ACUTE MALNUTRITION**
The supplementary ration is given in the form of a dry take home ration. Table 27 below indicates the appropriate ration size for PLW and MAM children.
TABLE 27 TYPICAL RATION SIZE FOR PLW AND MAM CHILD WITH ACUTE MALNUTRITION

<table>
<thead>
<tr>
<th>Food commodity</th>
<th>Quantity</th>
<th>Kcal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fortified Wheat Flour</td>
<td>333</td>
<td>1,212</td>
</tr>
<tr>
<td>Pulses</td>
<td>67</td>
<td>228</td>
</tr>
<tr>
<td>Fortified Veg Oil</td>
<td>27</td>
<td>239</td>
</tr>
<tr>
<td>Iodized Salt</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>MNT</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>430.5</td>
<td>1,680</td>
</tr>
</tbody>
</table>

**FOLLOW UP CARE FOR PLW WITH ACUTE MALNUTRITION**

The PLW should attend the health facility on a monthly basis for a check-up and to receive OPD-MAM rations and multiple micronutrient tablets. At each visit:

- Check MUAC
- Check weight (for pregnant women)
- Record information on the clinical record
- Record the ration given on the mother’s ration card
- Record the mothers registration number on ALL documentation
- Ensure continued counselling for ante natal / post natal care and IYCF

**DISCHARGE CRITERIA FOR PLW WITH ACUTE MALNUTRITION**

**TABLE 28 DISCHARGE CRITERIA FOR PLW WITH ACUTE MALNUTRITION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured*</td>
<td>Breastfeeding infant reaches 6 months of age</td>
</tr>
<tr>
<td>Defaulted</td>
<td>Absent for 3 consecutive visits</td>
</tr>
<tr>
<td>Died</td>
<td>Died during time registered in OPD-MAM</td>
</tr>
<tr>
<td>Transfer to other health facility</td>
<td>PLW transfers care to another health facility</td>
</tr>
</tbody>
</table>

* Cured for PLW is a reporting category and is not related to ‘cure’ from acute malnutrition. The PLW is registered and receives continued OPD-MAM rations/ MNT until the child reaches the age of 6 months.
REPORTING
The monthly report for admissions and discharges of PLW is included in the monthly reporting format for children aged 6 to 59 months [see annex 24]. Length of Stay (LOS) and Average Weight Gain (AWG) are not reported for PLW.

MONITORING & SUPPORTIVE SUPERVISION
The performance checklist for OPD-MAM for PLW is included in the performance checklist for children aged 6 to 59 months [Annex 26]

ANNEX 28 TREATMENT CARD FOR PLW WITH ACUTE MALNUTRITION

Individual card for Acutely Malnourished PLW (Front)

<table>
<thead>
<tr>
<th>Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image]</td>
</tr>
</tbody>
</table>

**OUTPATIENT TREATMENT CARD**
**Pregnant / Lactating Woman**
General Directorate Preventive Medicine
Public Nutrition Department

**Identification of OPD-MAM**
Agency:  
Province:  
Clinic/Centre:  
District:  
Target Group (mark)  
O Pregnant  
O Lactating  
Village: (Geocode ID)

**Identification of beneficiary**
Name  
Husband’s name  
Address  
Woman’s age (in years)  
MUAC (cm)

**Reason for admission**  
Mark: O New Admission  O Return Default  O Transferred

Multiple Micronutrient Tablet

**4. Exit information**  
Exit date: dd/mm/yyyy  
Exit as:  
Mark outcome: O Cured  O Died  O Transferred  O Default

MUAC (cm)
<table>
<thead>
<tr>
<th>No</th>
<th>Date</th>
<th>MUAC (cm)</th>
<th>Health Education (Y/N)</th>
<th>Ration received (y/n)</th>
<th>Remarks on Treatment Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
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<td>15</td>
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</tr>
</tbody>
</table>
### OPD-MAM Registration Book for Acute Malnourished Pregnant and Lactating Women

Province Name: _______  District Name: _______  HF Name and Type: _______  Implementing Agency: _______

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Husband Name</th>
<th>Address</th>
<th>PW/ LW</th>
<th>Age</th>
<th>Pregnancy or Lactation</th>
<th>Date</th>
<th>MUAC</th>
<th>Date</th>
<th>MUAC</th>
<th>Date</th>
<th>MUAC</th>
<th>Date</th>
<th>MUAC</th>
<th>Cured</th>
<th>Defaulted</th>
<th>Dead</th>
<th>Transfer</th>
<th>None-Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
SECTION 6: INPATIENT TREATMENT OF SEVERE ACUTE MALNUTRITION

This section contains the following sub-sections:

- Pathways to Treatment
- Eligibility Criteria for Inpatient treatment of SAM
- Identification and emergency treatment of medical complications
- Inpatient Management of Children with SAM aged 6 to 59 months
  - Phase 1 care for children aged 6 to 59 months
  - Transition Phase care for children aged 6 to 59 months
  - Phase 2 care for children aged 6 to 59 months

Inpatient Department of SAM (IPD-SAM) is given to SAM children aged less than 5 years either where facilities for outpatient department of SAM do not exist, or where children with SAM have been identified with IMCI danger signs or other complications and require stabilisation before continuing recovery in the outpatient SAM treatment setting. These patients are very fragile, often with a life threatening electrolyte imbalance. They do not always present with the typical symptoms of an illness (e.g. fever, rapid pulse or rapid respirations). It can be very difficult to diagnose dehydration or anaemia however it is extremely important to do so accurately as a misdiagnosis increases the risk of mortality.

The treatment process starts with a stabilisation phase; the progress of each child to the next stage of care depends on the individual condition of the child.

Treatment of SAM in inpatient settings provides 2 options;

1. Full treatment until cure in the inpatient setting
2. Stabilisation followed by referral to outpatient care

Option 1 is provided only where there is no option for outpatient treatment following stabilisation. Option 2 is different only in where the outpatient care is provided; the protocols for inpatient treatment during stabilisation remain the same.

Whenever possible, SAM children should be referred to outpatient treatment following stabilisation and continue recovery as an outpatient. Studies have shown better survival for SAM children in outpatient care than when treatment is completed entirely as an inpatient. If no outpatient treatment service is provided near the child’s home, outpatient treatment provided through the hospital facility should be considered.

The care described in the following section is based upon the WHO 10 steps (see figure 11 below) illustrating the stabilisation and rehabilitation of children with SAM in the inpatient setting.

---


1: term of stabilization centre/TFU has been changed to IPD-SAM in this guideline.
The length of ‘stabilisation’ depends on the individual condition of each child. In terms of care protocols, ‘stabilisation’ is done in two different phases (Phase 1 and Transition Phase) using different therapeutic milks.

FIGURE 11 WHO TEN STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>PHASE</th>
<th>STABLISATION</th>
<th>REHABILITATION</th>
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<tr>
<td>1.</td>
<td>Hypoglycaemia</td>
<td>Days 1-2</td>
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<tr>
<td>2.</td>
<td>Hypothermia</td>
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<td>3.</td>
<td>Dehydration</td>
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<td>5.</td>
<td>Infection</td>
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<td>6.</td>
<td>Micronutrients</td>
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<td></td>
</tr>
<tr>
<td>7.</td>
<td>Cautious feeding</td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td>Catch-up growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Sensory stimulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Prepare for follow-up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The length of Phase 1 and Transition phase varies for each child and the whole process of ‘stabilisation’ may last from 3 to 7 days. The type of care delivered in Transition Phase differs depending on whether the child can be transferred to outpatient department for SAM or whether the child must remain as an inpatient.

PATHWAYS TO INPATIENT CARE OF SAM TREATMENT

Systematic screening in the community by CHWs and systematic screening at the health facility in OPD and other departments using MUAC (for children 6 – 59 months) and oedema identifies children with SAM. Where staffing and patient caseloads permit, weight for height may also be used for screening at the health facility.

When children with SAM have not been screened in the community and present to the health facility, it is more often because the child is sick. The child should be assessed according to IMCI protocols and assessed for IMCI danger signs or other medical complications. The assessment process is described in section 3.

In some cases, children with medical complications, if they have not been screened for acute malnutrition in the community or lower level health facility may be referred to the paediatric ward of the hospital. Typically the child will be admitted to the hospital via the emergency room (ER) or the OPD. It is essential that the child is screened for acute malnutrition in the ER and OPD to ensure the child is triaged correctly and referred to the inpatient unit for SAM if SAM is diagnosed along with the complications.

Systematic screening of children admitted to the paediatric ward using MUAC, weight for height and checking for oedema may also detect cases of SAM with complications which have been missed in the community, lower level health facilities and the hospital ER/OPD.

Infants and children with SAM and complications or lack of appetite are at very high risk of mortality. It is VITAL that these children are able to access care quickly in order to prevent death from conditions such as hypoglycaemia or hypothermia.

The transit time, from identification of SAM or the arrival as a referral from outpatient treatment to the first inpatient treatment, should be minimised. Ideally the first feed of therapeutic milk should occur within 30 – 60 minutes of admission. If this is not possible 10%
sugar water must be given to prevent hypoglycaemia. **Attention to nutritional care is as equally important as medical care.**

**ELIGIBILITY CRITERIA FOR INPATIENT CARE FOR SAM FOR CHILDREN AGED 0 TO 59 MONTHS**

The eligibility criteria for inpatient care for infants and children aged 6 to 59 months with SAM is summarised in *Annex 29*.

The eligibility criteria fall into two categories related to age;

1. **Children aged 6 to 59 months**

Some children in this group may be identified as having severe oedema (+3) or marasmic kwashiorkor. These children must be referred to IPD-SAM even if they have good appetite and no complications because they are at very high risk of death due to the severity of their condition. Children identified with SAM which is not +3 oedema or marasmic kwashiorkor should be admitted to Inpatient Department for SAM if they have no appetite for RUTF or if there are medical complications

   a. Children 6-59 months with severe oedema (+3) or marasmic kwashiorkor
   b. Children 6-59 months admitted with SAM + Poor appetite or medical complications
   c. Children 6-59 months referred from outpatient department for SAM
   d. Children 6-59 months referred from outpatient department for MAM
   e. Child older than 6 months but weighing less than 4 kg

2. **Infants aged less than 6 months**

The treatment protocols for infants aged less than 6 months and children aged 6 to 59 months are very different. The protocols for these groups are described in the following sections.

- Treatment of children aged less than 6 months *(section 7)*
- Treatment of children aged 6 months or older but weighing less than 4 kg *(section 7)*

The identification and emergency treatment of medical complications are similar for each of the age groups.

**IDENTIFICATION AND EMERGENCY TREATMENT OF MEDICAL COMPLICATIONS**

Immediately upon admission the infant /child must be fully assessed by a health staff and treatment given to stabilise the child’s condition if there are any medical complications. The treatment of some of these complications is described below

**TREAT / PREVENT HYPOGLYCAEMIA**

Hypoglycaemia is a low level of glucose in the blood (less than 3 mmol/litre or less than 54 mg/dl). It is a serious condition and can cause death. It can occur together with hypothermia and both the conditions are signs of possible infection. Hypoglycaemia may also occur if the malnourished child has not been fed for 4-6 hours, sometimes even for lesser duration. For this reason it is always preferable to feed the child every 3 hours (8 times in 24 hours) especially during Phase 1 and Transition Phase. Signs of hypoglycaemia include lethargy, limpness, convulsions and loss of consciousness.
• If hypoglycaemia is suspected but blood glucose cannot be measured, empirical treatment should be started immediately
• Consider hypoglycaemia whenever hypothermia is detected (axillary temperature less than 35.0°C; rectal temperature less than 35.5°C), or if any signs of hypoglycaemia are present.

MEASURING BLOOD GLUCOSE LEVEL
If possible, testing for blood glucose level should be done using paper strips such as Dextrostix or Glucostix. When the end of the paper strip is covered with a blood sample, the strip changes colour to indicate the blood glucose level. Check the expiry date of the strips; if the date is expired, the readings may not be correct. Different testing kits may have different instructions. In general, instructions are as follows:
• Touch the paper to the blood sample
• Wait for an appropriate number of seconds
• Wash the blood off the strip with running water
• Compare the test paper to the colour scale provided with the strips.
In many cases the colour scale for the paper strips may not clearly show the level. For example, it may say that a certain colour corresponds to 2-4 mmol/L. If a range is given, assume that the child’s blood glucose is the lower reading (2 mmol/L in this case).

TREATMENT
If the child is conscious give:
• 50 ml bolus of 10% glucose or sucrose solution (1 rounded teaspoon of sugar in 3.5 tablespoons water) orally or by nasogastric (NG) tube.
• Feed F-75 every 30 minutes for first two hours (giving ¼ of the total recommended two hours’ feed)
• Keep the child warm
• Antibiotics
If the child is lethargic, unconscious or convulsing, give:
• 10% glucose (5 ml/kg body weight) intravenously followed by 50 ml of 10% glucose or sucrose by NG tube to prevent rebound hypoglycaemia. Then give starter F-75 as above
• If convulsion persists after giving intravenous glucose, give per rectal diazepam (0.5 mg/kg body weight)
• Keep the child warm; give antibiotics and feed as mentioned above
• If the child will be given IV fluids for shock, there is no need to follow the 10% IV glucose with an NG bolus, as the child will continue to receive glucose in the IV fluids.

PREVENTION OF HYPOGLYCAEMIA
Frequent feeding is important in preventing both hypoglycaemia and hypothermia. If possible feeds during the stabilisation phase should be given every 3 hours including waking the child during the night. If staff and facilities are not available to properly feed and monitor the child overnight, the full volume of daily feed should be given in fewer feeds (5 or 6 times daily). The likelihood of hypoglycaemia is reduced if the child is given the proper amount of feed during the day.
NB: If the number of feeds is reduced for whatever reason, the volume of milk given at each feed must be increased accordingly.

TREAT / PREVENT HYPOTHERMIA
Hypothermia is a condition with low body temperature (axillary temperature is below 35°C). A rectal temperature of <35.5°C is a more reliable indicator of hypothermia. If available, a low reading rectal thermometer should be used. Check for hypoglycaemia whenever hypothermia is detected.

Using a rectal thermometer
- Shake the thermometer down to below 35°C
- Position the child on his side or back with legs lifted
- Insert thermometer in rectum so that the bulb goes in about ½ inch
- Keep in place for 1 minute and take the reading.

Using an axillary thermometer
- Shake thermometer down to below 35°C
- Place thermometer under armpit
- Keep in place for 3 minutes
- If below 35°C, take rectal temperature for more accurate reading.

TREATMENT
- Re-warm the child by clothing the child (including head), or covering with a warmed blanket and increasing the room temperature with a heater or lamp placed nearby, or by putting the child on the mother’s bare chest (skin to skin) and covering them (Figure 5.5).
- Feed the child (or start oral rehydration for dehydration if required)
- Give antibiotics
- Do not use hot water bottles for warming due to danger of burning fragile skin.

PREVENTION
- Keep the child covered and away from draughts of air
- The room temperature should be maintained at not less than 27°C if possible
- Avoid regular bathing, keep child dry, change wet nappies, clothes and bedding
- Avoid exposure (e.g. bathing, prolonged medical examinations)
- Let child sleep with mother/caregiver at night for warmth
- Feed regularly, give feeds throughout the day and night during Phase 1, if possible, especially for the first 24-48 hours

TREAT DEHYDRATION
Misdiagnosis and inappropriate treatment for dehydration is the most common cause of death of the severely malnourished patient. It is difficult to diagnose dehydration in children with SAM; the signs of dehydration such as non-elastic skin and sunken eyes are often present in the severely malnourished patient regardless of hydration status. It is important to take a detailed medical history and determine if there was a recent fluid loss from acute diarrhoea or vomiting.
If a child is conscious or has a naso-gastric tube in place and the risk of aspiration is low, oral rehydration solutions are **ALWAYS** preferable to intravenous rehydration solutions. Intravenous solutions should only be used when the child is unconscious or is being resuscitated from shock. An intravenous infusion should never be present in a child who is able to take fluids orally or by nasogastric tube.

**NB:** Oral Rehydration Solutions such (ORS or ReSoMal) for the treatment of dehydration must **NEVER** be freely accessible to carers on the hospital ward.

**ASSESS THE DEHYDRATION**

A diagnosis of dehydration must be made from an examination of the clinical condition with a positive history of fluid loss which identifies the cause of dehydration (e.g. persistent vomiting or acute diarrhoea). The assessment of dehydration for children with SAM can be very difficult even for a skilled health staff and can be confused with other conditions. **It is essential to manage the child with extreme caution** and be willing to change the diagnosis if the clinical status of the child does not improve with rehydration. There is a narrow ‘therapeutic window’ for children with SAM and dehydration; over-hydration and death can occur quickly.

**CLINICAL SIGNS**

- The skin pinch test of the abdomen or other part of the body is an unreliable sign especially in marasmic children. A positive skin pinch test may occur in a marasmic child with a normal hydration status.
- Children with chronic diarrhoea may become adapted physiologically to this state and do not require urgent rehydration therapy.
- Sunken eyes must be confirmed by an accurate history. The eyes must have become sunken in the previous few days and a positive history for the cause of dehydration identified. In dehydration this is due to contraction of the venous plexus behind the eye and occurs acutely. Sunken eyes can also occur over time in marasmic children due to a loss of fat behind the eyeball.
- A diagnosis of dehydration should **ALWAYS** be a provisional diagnosis. The response to treatment must be observed before the diagnosis can be confirmed.
- Concomitant signs of dehydration may include increased heart rate, temperature and/or reduced blood pressure.
- A child with oedema should not be diagnosed with dehydration although they may be hypovolaemic.

**PATIENT’S STATUS**

- Weigh the child. The weight should be monitored regularly during rehydration to assess the response to treatment. Rehydration therapy should aim to replace the estimated fluid losses up to a maximum of 5% body weight.
- Check the heart rate
- Check the respiration rate
- Feel and note cold extremities
- Palpate the liver and mark the costal margin with indelible ink
- Note the absence of jugular venous distension
- Note the level of consciousness of the child
- Note the amount of any oedema
**NB**: The rehydration of children with oedema is the same as the treatment of a child with septic shock

**ORAL REHYDRATION SOLUTIONS**

1. **Rehydration Solution for Malnutrition** (ReSoMal) should be used as the standard therapy for children with SAM diagnosed with dehydration

2. **Low Osmolarity Oral Rehydration Solution** (LO-ORS) may be used for the treatment of children with SAM but only for those who have a positive diagnosis of Acute Watery Diarrhoea (AWD) or Cholera

3. **Standard (full strength) Oral Rehydration Solution** (ORS) does not have a suitable formulation for the treatment of dehydration in children with SAM.

Where ReSoMal is not available, a modified, half-strength solution of LO-ORS may be used with added potassium and glucose. A recipe for this modified LO-ORS is indicated in annex 30

**INTRAVENOUS REHYDRATION SOLUTIONS**

1. Ringers Lactate Solution with 5% Dextrose
2. 0.45% Saline with 5% Dextrose

**TREATMENT OF MARASMIC CHILDREN WITH DEHYDRATION**

Figure 12 below describes the algorithm for the treatment of dehydration in a child with severe wasting.

**FIGURE 12 ALGORITHM FOR THE TREATMENT OF DEHYDRATION IN A CHILD WITH SEVERE WASTING**

```
Conscious

Estimate weight loss due to dehydration

Unconscious

ReSoMal

• 5 ml/kg first 2 hrs
• 5-10 ml/kg Next 10 hrs

Intravenous Solution

• 15 ml/kg first 1 hour
  THEN REASSESS

If improving:
• 15 ml/kg second hour
If conscious: Insert nasogastric tube and start ReSoMal

If not improving:
DIAGNOSE SEPTIC SHOCK
```
**MONITORING THE PROGRESS OF REHYDRATION THERAPY**

The therapeutic window for rehydration therapy is narrower for a child with SAM than for a normally nourished child due to the abnormal pathophysiology. The reduced function of the cardiac, renal and abnormal cardiovascular system results in abnormal responses to an increase in fluid load. It is much easier to quickly overhydrate the child resulting in heart failure and death as the increased fluid volume in the cardiovascular system cannot be excreted normally. Responses to diuretic medications in heart failure may be limited in a child with SAM. Avoiding over-hydration and heart failure is easier and far preferable to treating them.

Figure 13 below describes the algorithm for monitoring rehydration therapy in a severely wasted patient with the aim of preventing fluid overload. The goal of rehydration therapy is to improve the child’s clinical status. This should normally be no more than 5% of the child’s body weight.

**FIGURE 13 ALGORITHM FOR MONITORING REHYDRATION THERAPY IN A SEVERELY WASTED PATIENT**

* The goal of rehydration therapy is based on the improvement of clinical status. A maximum target weight for rehydration therapy should be no more than 5% of body weight
MONITORING THE CLINICAL STATUS DURING THE REHYDRATION OF THE MARASMIC CHILD EVERY 30-60 MINS ASSESS:

- Weight the patient (and calculate the target weight gain?)
- Heart rate, temperature, respiration rate
- Heart sounds (over-hydration may result in a gallop rhythm)
- Observe for signs of respiratory distress (chest in drawing, nasal flaring)
- Observe for vomiting or diarrhoea (estimate volumes and correlate with weight loss)
- Reassess the costal margin of the liver
- Reassess the absence or presence of jugular venous distension

During rehydration therapy, breastfeeding should not be interrupted; the child should be breastfed on demand. Successful rehydration results in an improvement of the clinical status of the child with an improvement in the level of consciousness, heart rate reduces and blood pressure is improved.

NB: Rehydration therapy should be stopped immediately if any of the following occur:

- Target weigh for rehydration is achieved (start F75)
- There is development of oedema (start F75)
- Jugular venous distension is observed
- Jugular veins become engorged when abdomen is pressed
- An increase in the costal margin of the liver of 1cm or more
- Tenderness of the liver on palpation
- An increase in respiratory rate of 5 breaths per minute or more
- Increase in heart rate of 25 beats/min or more
- Development of grunting expiratory sounds
- Development of pulmonary rales or crepitations on auscultation
- Development of a triple rhythm in the heart sounds or brachial pulse

DIAGNOSIS OF HYPOVOLAEMIC SHOCK IN A MARASMIC PATIENT

Hypovolaemic shock is diagnosed when the patient is;

Lethargic or unconscious
AND
Has cold hands

PLUS EITHER:
Slow capillary refill (longer than 3 seconds)
OR
Weak or fast pulse
(160/min or more for children 2-12 months of age, 140/min or more for children 1-5 years)

NB: The differential diagnosis of hypovolaemic shock and septic shock and is often very difficult in a child with SAM. If another illness such as viral infection, malaria or other severe condition is present, septic shock should be assumed. Septic shock is often seen in individuals with immune-compromisation or hospital acquired infections. Mortality due to multiple organ failure may exceed 50%.
TREATMENT OF HYPOVOLAEMIC SHOCK IN A MARASMIC PATIENT
Use an intravenous solution as indicated in the previous section. When using intravenous solutions over-hydration may occur rapidly and the child should be monitored closely for signs of fluid overload.

- Administer 15 ml/kg/ hr. during the first hour then reassess
- Continue the infusion until there is weight gain up to 3% of body weight
- Increase in weight should correlate with signs of clinical improvement
- If there is no clinical improvement stop rehydration and assume septic shock or other cause
- As soon as the child gains consciousness change to oral rehydration therapy
- Give ReSoMal orally or by nasogastric tube at 10 ml/kg/hr. following the algorithms presented in the previous section

DIAGNOSIS OF DEHYDRATION IN THE OEDEMATOUS PATIENT
Patients with bi-lateral oedema are over-hydrated and have increased total body water and increased sodium levels. Oedematous patients thus cannot be dehydrated, although they are frequently hypovolaemic. The hypovolaemia (relatively low circulating blood volume) is due to a dilatation of the blood vessels with a low cardiac output. The treatment of hypovolaemia for a child with oedema is the same as the treatment for septic shock (see below).

If a child with oedema has watery diarrhoea, and the child is deteriorating clinically, then the fluid lost can be replaced on the basis of 30 ml of ReSoMal per episode of watery stool.

TREATMENT OF SEPTIC SHOCK FOR ALL MALNOURISHED PATIENTS
Septic shock is a serious medical condition. It is caused by decreased tissue perfusion and oxygen delivery as a result of infection and sepsis. It can cause multiple organ failure and death. Children, immune-compromised individuals and the elderly are most susceptible as their immune systems cannot cope with infection as well as healthy adults do. The mortality rate from septic shock can be as high as 50%.

Septic shock presents with some of the signs of true dehydration and also of cardiogenic shock. The differential diagnosis is often very difficult.

Children who appear very ill may have septic shock, cardiogenic shock, liver failure, poisoning with traditional medicines, malaria, acute viral infection or other severe conditions. All “very ill” children should not be automatically diagnosed as having septic shock; the true reason for the condition should be sought.

If septic shock develops after admission, treatment must be carefully reviewed to determine if the treatment is the cause of the clinical deterioration. Any drugs considered not essential for immediate treatment should be stopped.
** Diagnosis of Septic Shock**

Septic shock is diagnosed when;

- Tachycardia with weak or absent radial pulses (femoral pulses may also be weak)
- Cold extremities (capillary refill time more than 3 seconds)
- Reduced level of consciousness
- Absent signs of heart failure
- Possible signs of infection (may be masked in children with malnutrition)

**NB:** The differential diagnosis of hypovolaemic shock and septic shock is often very difficult in children with SAM. If a concomitant illness such as viral infection, malaria or other severe condition is present, septic shock should be assumed. Septic shock is often seen in individuals with immune-compromisation or hospital acquired infections. Mortality due to multiple organ failure may exceed 50%.

**Treatment of Septic Shock**

Patients diagnosed with septic shock should immediately be given;

- Give Oxygen via face mask or nasal cannula
- Give broad spectrum, first line antibiotic
- Conscious patients should be started on F75 orally or via NG tube
- Treat / prevent hypoglycaemia in unconscious patients
- Treat / prevent hypothermia
- Keep physical disturbance of the child to the minimum required to deliver emergency care

**Intravenous Rehydration Solutions**

1. Ringers Lactate Solution with 5% Dextrose
2. 0.45% Saline with 5% Dextrose

If there is a decreased level of consciousness which is diagnosed to be due to poor cerebral perfusion;

- Whole blood transfusion 10ml/ kg over at least 3 hours
  or
- Intravenous rehydration solutions at 10 ml/kg /hr.

**NB:** Administration of intravenous fluids when septic shock is diagnosed must be done with extreme caution so as not to induce fluid overload. The patient should be monitored every 10 minutes for signs of clinical changes. During blood transfusion oral feeding must be discontinued. When the child regains consciousness and blood transfusion is no longer required the child may be started on F75. As soon as clinical signs have improved all intravenous fluids must be stopped.

**Diagnosis and Treatment of Heart Failure**

Heart failure in children with SAM may be manifested for several reasons;

- ReSoMal is incorrectly prescribed and administered by staff or carers
- Dehydration is incorrectly diagnosed and / or inappropriate treatment given
- Unnecessary use of intravenous fluids in conscious patients
- Severe anaemia
• Secondary to blood transfusion
• Secondary to respiratory infection
• Secondary to septic shock
• Rapid shift of fluid and electrolytes during stabilisation / transition Phases

**SYMPTOMS OF HEART FAILURE**

Heart failure may be diagnosed in children with SAM when the patient manifests one or more of the following symptoms;

• Tachypnoea
  o More than 50 breaths / min in infants aged less than 12 months
  o More than 40 breaths / min in children aged 12-59 months
• If Tachypnoea is present with weight loss, diagnose pneumonia
• Increase in respiration rate more than 5 breaths / min during rehydration therapy or transfusion
• The appearance of expiratory grunting sounds
• A gain in weight with signs of clinical deterioration
• Tenderness on palpation of the liver
• Increase in the costal margin of the liver
• Rales or crepitations
• Distended jugular vein (may be more evident on liver palpation)
• Sudden death

These changes may occur during rehydration or transfusion but also may result from major shifts of fluid and electrolytes during nutritional recovery. When the extra-cellular fluid shifts to the vascular space, there may be dilutional anaemia. This is normal during recovery and should not be treated with blood transfusions. Generally, blood transfusion should only be given when severe anaemia is diagnosed within 24 hours of admission.

Therefore there does not necessarily have to be any gain in weight from infused fluids to suspect heart failure. There is often a disturbance in the fluid balance between the cellular and intravascular compartments in the patient with SAM. During nutrition therapy, especially in Phase 1 and transition Phases, if the cellular membrane transport mechanisms recover more quickly than the heart and kidney function, a shift of electrolytes with the concomitant shift of fluid into the intravascular space cannot be responded to appropriately, physiologically. Pulmonary oedema, heart failure and death quickly follow. It is often very difficult to reverse this process unless it is identified and treated appropriately in its early stages.

**NB:** It may be difficult to distinguish between heart failure and pneumonia in children with SAM. Figure 13 below describes the algorithm for making a differential diagnosis between pneumonia and fluid overload
**TREATMENT OF HEART FAILURE**

If heart failure is diagnosed:

- Stop all fluids (both oral and intravenous fluids or transfusions)
- Small amounts of 10% sugar water may be given to prevent hypoglycaemia
- Administer Frusemide 1 mg / kg as a single dose
- Consider Digoxin 5 microgrammes/kg as a single dose (use paediatric preparations not adult preparations)
- Reduce or stop drugs which are reconstituted from sodium salt

The treatment of heart failure takes precedence over the treatment of anaemia. Blood transfusions should be stopped if there are signs of heart failure. Transfusions should only be done in this circumstance if there are facilities and staff experienced in exchange transfusion. Exchange transfusion in anaemia with heart failure would normally be a partial volume replacement with whole blood or packed red cells. The volume of blood to be replaced should be calculated by the paediatric consultant according to the clinical status of the child.

Treatment of heart failure with Frusemide is often ineffective. Digoxin is given as a single dose. Loading doses of digoxin are normally given to control tachyarrhythmias; in this instance the aim of the single dose of digoxin is to improve cardiac output through its positive inotropic effect on cardiac muscle through the inhibition of the enzyme ATPase. Digoxin may also reduce norepinephrine levels which may improve peripheral vasodilation and decreasing renal tubular reabsorption of sodium thereby suppressing renin secretion in the renal distal tubules.

**DIAGNOSIS AND TREATMENT OF SEVERE ANAEMIA**

Primary severe anaemia in children with SAM should be diagnosed on admission to hospital. Diagnosis of severe anaemia is made when there is;

- Severe palmar pallor
- Haemoglobin level is less than 4g/ dl (40g/l) or packed cell volume is less than 12%
It is expected that children with SAM will experience a fall in haemoglobin during the early phases of treatment particularly resulting from changes in electrolyte and fluid balance. Dilutional anaemia may occur 1 – 14 days after nutritional therapy with F75 has been started; it is secondary to this process and should not be treated through transfusion.

TREATMENT OF SEVERE ANAEMIA
The main treatment for anaemia is through transfusion of whole blood or packed red cells;

- Blood transfusion at 10 ml/kg slowly over 3 hours
- No food or fluids to be given during transfusion or 3 hours after transfusion
- Do not give iron for the treatment of anaemia in children with SAM

FIGURE 15 ALGORITHM FOR THE TREATMENT OF SEVERE ANAEMIA

TREATMENT FOR ABSENT BOWEL SOUNDS, GASTRIC DILATION AND INTESTINAL SPLASH WITH ABDOMINAL DISTENTION
In children with SAM, there is usually overgrowth of intestinal bacteria. This may lead to reduced gastric motility, deterioration of the gut lining and in some cases to intestinal obstruction with an absence of peristalsis. Bacteria are able to cross the gut lining causing sepsis. This is a clinical emergency with a poor prognosis. The medical and nutritional management of the patient must be reassessed.

The following measures should be taken;

- Give intravenous antibiotics as for septic shock
- Stop all other drugs which may be causing hepatotoxicity
- Give IM magnesium sulphate (2ml of 50% solution) twice daily until stool is passed
- Insert a nasogastric tube and do gastric lavage* with 5% dextrose or 10% sugar water
- When gastric aspirates are clear, insert 5 ml / kg of 10% sugar water and leave for 1 hour
- Aspirate sugar water after 1 hour. If the amount is less than inserted make up the volume again to 5 ml/kg with 10% sugar water. Do not discard the aspirated fluid.

Anaemia

- Hb = 40 g/dl or greater
- PCV = 12% or greater
- 2-14 days after admission

No transfusion necessary

- HB Less than 40 g/dl
- PCV Less than 12%
- Within 48 hrs of admission

Whole blood or packed cells
- Give over 3 hours
- No food for 3-5 hours after transfusion
• Keep the child warm
• Give intravenous glucose to treat/prevent hypoglycaemia
• Monitor continuously for improvement for 6 hours without other treatment

* Gastric Lavage: Insert 50 ml 5% dextrose / 10% sugar water into the stomach via a nasogastric tube and aspirate the contents back immediately. This should be repeated until the gastric aspirate becomes clear

Improvement in the clinical status of the child will be indicated by;

• Decreased abdominal distension
• Increased peristalsis / bowel sounds
• General improvement in condition (e.g. level of consciousness)

If there is improvement:

• Start F75 (give half the normal quantity for the child’s weight)
• Aspirate the stomach before each feed
• If the amount of aspirate is large, decrease the amount of F75
• If the amount of aspirate is small, the amount of F75 may be increased gradually

If there is no improvement after 6 hours:

• Consider an intravenous infusion. (use a fluid suitable for children with SAM)
• Infuse fluids at a maximum of 4 ml / kg / hr. (use a burette or pump)
• When gastric aspirates decrease to ½ of the fluid inserted into the stomach discontinue the intravenous infusion and continue with oral treatment only
INPATIENT MANAGEMENT OF CHILDREN WITH SAM AGED 6 – 59 MONTHS

The inpatient management of SAM in children aged 6-59 months offers two options for patient management:

1. Inpatient treatment until cure (where no outpatient facilities exist)
2. Inpatient stabilisation and transfer to outpatient care (where outpatient facilities exist)

The protocols described in this section describe both options.

Patient management is done with two main considerations; stabilisation and rehabilitation. In terms of inpatient care this process is described in terms of 3 distinct phases of nutritional recovery;

- **Phase 1:** This is the initial period when emergency treatment is given and careful nutritional and medical treatment is given to stabilise the abnormal pathophysiology of the child. It normally lasts from 2-7 days.

- **Transition Phase:** After the initial stabilisation of the child’s condition, the amount of energy and protein is increased in the child’s diet while medical treatment continues. It normally lasts 2-3 days. In this phase the decision is made to continue treatment in inpatient care or to transfer the child to outpatient care.

- **Phase 2:** When the child’s condition has improved significantly, the amount of energy and protein in the diet is increased to enable rapid weight gain. This phase may last from 2-6 weeks depending on the age of the child and where the care is given.

For a child managed entirely in inpatient care the expected length of stay is approximately 21-28 days depending on the child’s condition. In outpatient care, the rate at which the child gains weight is often slower and full recovery may take approximately 6 weeks.

The hospital environment places children under care at risk of nosocomial infection, increased mortality risk and may be disruptive to the whole family. While recovery may be slower in the community setting it is the preferred option where outpatient services exist. The child should be transferred from inpatient care to outpatient care as soon as possible during the child’s recovery.

If an outpatient service does not exist near the hospital, it should be established, preferably through the outpatient department. The ability to transfer patients earlier during recovery allows the patient load to be decreased easing the pressure on beds while the attention of the staff can be devoted to the care of children in more urgent need. The triage of children prior to admission should be carried out as outlined in section 2.

The initial steps in the management of children with SAM aged 6 – 59 months should focus primarily on providing rapid identification of SAM and initiation of treatment. The care must prioritise emergency care for any complications as outlined in the previous sections. The time from admission onto the inpatient ward to receiving the first medical and nutritional care should not exceed 30 minutes.

- Triage emergency cases and provide emergency care
- Give first line antibiotics
- Initiate feeding with F75

If there is a delay in being seen by the doctor, small amounts (up to 50 ml) of 10% sugar water should be given within 30 minutes to prevent hypoglycaemia.
ASSESSMENT OF CHILDREN AGED 6 – 59 MONTHS IN INPATIENT SAM TREATMENT

On admission:
- Measure MUAC
- Weigh the patient naked *(at most a very light undergarment may be worn for modesty)*
- Measure the height / length of the child (if WFH is used)
- Calculate the WFH in Z scores using charts for WHO growth standards (2006)
- Check the temperature, pulse and respiration rate of the child
- Write the observations in the patient chart
- Prescribe F75 according to weight (see table 29 below)
- Prepare F75 within 30 mins of admission (or use 10% sugar water to prevent hypoglycaemia before the next feed is due)
- Administer prescribed medicines

* The medical and nutritional treatment prescribed by the doctor is dependent on very accurate weighing. Children should be weighed naked. Providing privacy for weighing facilitates this. Where privacy is not possible only a **VERY LIGHT** undergarment may be worn. Inaccurate weighing may lead to incorrect treatment and have very serious consequences for the child. For children 6 – 59 months the accuracy of the scale must be to the nearest 100g.

Advise the mother:
- The child is severely malnourished and needs medicines and a special therapeutic milk in order to recover (be sure to distinguish the therapeutic milk from commercially available feeds, it is important not to give messages which promote the use of artificial milk after discharge)
- The mother should continue to breastfeed the child on demand. It is important to breastfeed the child **BEFORE** each feed of therapeutic milk
- If the mother is not breastfeeding, advise her that she will receive counselling during her stay to try to re-start breastfeeding. Breast milk is far superior to commercial feeds and even the therapeutic milk provided in hospital
- If the child is bottle feeding this must be stopped immediately. Bottles must be taken and disposed of
- Unless contraindicated due to a critical illness the mother should interact frequently with the child through talk and play. Severe malnutrition affects the child psychologically and play is essential for the child’s emotional recovery from illness

**CARE OF THE MOTHER**
The admission of an infant aged less than 6 months into inpatient care is always a worrying time for the mother but is also an opportunity to ensure she receives proper nutrition counselling for her and the infant.

Care for the mother should include;
- Inform the mother of the importance of the therapeutic milk and its timely feeding to the child according to the inpatient unit timetable
- Other ward routines for meal times, washing of clothes and attending to hygiene needs must be discussed as soon as possible after admission
- Counsel the mother on maternal nutrition and self-care
- Staff should remove and discard any baby bottles on admission. Their use is banned in In-Patient Department for SAM
- If the mother brought commercial milk formula with her, she may drink it herself to improve her own nutritional status but it should NEVER be fed to the child during the infant’s time in inpatient care.
- The mother should receive multiple micronutrient tablets daily during admission if she is continuing breastfeeding beyond 6 months

**Phase 1**
The care prescribed in this section must go together with any modifications in care required for the treatment of life threatening complications.

**Nutritional Care in Phase 1**
The diet used for children aged 6-59 months in Phase 1 is F75 therapeutic milk. This is a low protein formulation (high protein at this stage increases the risk of death) containing the right balance of macro and micro nutrients to stabilise the child’s condition. Micronutrient deficiencies are corrected and the abnormal pathophysiology of the child is restored.

The F75 provided by UNICEF already contains all of the micronutrients required for stabilisation. There is no need for additional micronutrient supplementation. Other commercial milk formulas are not the same and must not be used without the approval of the Ministry of Public Health Public Nutrition Department. If the mother brings commercial formula with her to the hospital she must be strongly advised NOT to use the formula for the child.

If home-made F75 is used the recipe should follow one of the recommended recipes provided in the annex 31. It is essential to add combined mineral and vitamin mix (CMV) in order to provide the micronutrients essential to recovery.

The F75 is given according to the weight of the child (Table 29). Manual calculations of milk requirement should be checked against the tables for accuracy.

F75 provides 75 kcal / 100 ml. The energy requirement of the child in Phase 1 is 100 kcal / kg / day. This translates to 130 ml of F75 milk / kg / day. The milk should be given in divided feeds ideally every 2-3 hours depending on the condition of the child (8-12 feeds per day).

**NB: A CHILD ON F75 IN PHASE 1 IS NOT EXPECTED TO GAIN WEIGHT**

If for any reason the frequency of feeds cannot be guaranteed (e.g. due to staff shortages at night) the volume of milk given must be recalculated (or looked up in the table) according to how many feeds can realistically be given per day. The number of feeds per day in Phase 1 should not be less than 6. If the correct total daily volume of F75 is given during the day, it minimises the risk of hypoglycaemia occurring during the night when feeds are not available. Mothers should be advised in this case to continue breastfeeding overnight.

**Preparation of F75**
F75 milk is prepared by mixing one small packet (102.5g) with 500 ml of water. Water should be boiled then cooled and preferably filtered. Therapeutic milk should then be made within 30 mins of boiling the water.

When F75 is not available, F100 can be diluted to make a TEMPORARY alternative to F75. This is an emergency measure only and is not acceptable as a standard replacement to F75.
**Preparation of Diluted F100**

Add 1 small packet of F100 to 670 ml of water instead of using 500ml as usual.

If only small quantities are needed and F100 has already been prepared for use in phase 2, take 100ml of F100 and add 35 ml of water. This will produce 135 ml of diluted F100 which can be used as a temporary alternative to F75.

**Amount of milk to be given in Phase 1**

F75 is given so as to provide 100 kcal/kg/day of energy; this may be divided into several feeds. Ideally feeding should be given 8 times per day. Where there is a shortage of staff, particularly at night the feeds may be given 5 or 6 times per day. Reducing the number of feeds is not ideal since sick children are often unable to drink large volumes of milk. When the number of feeds is reduced, the volume of each feed is increased so as to ensure the child receives the correct amount of energy. The danger of hypoglycaemia occurring during the night may be reduced if the child is able to receive the entire volume of feed for the day before night time.

Table 29 below gives the volumes of milk which should be administered for a given weight, depending on how many feeds are received per day.

**Table 29: Amount of F75 milk to be given for children aged 6-59 months in Phase 1**

<table>
<thead>
<tr>
<th>Weight of the child (Kg)</th>
<th>Amount of Milk per feed 8 Feeds per day</th>
<th>Amount of Milk per feed 6 Feeds per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 – 2.1</td>
<td>40ml</td>
<td>50ml</td>
</tr>
<tr>
<td>2.2 – 2.4</td>
<td>45ml</td>
<td>60ml</td>
</tr>
<tr>
<td>2.5 – 2.7</td>
<td>50ml</td>
<td>65ml</td>
</tr>
<tr>
<td>2.8 – 2.9</td>
<td>55ml</td>
<td>70ml</td>
</tr>
<tr>
<td>3.0 – 3.4</td>
<td>60ml</td>
<td>75ml</td>
</tr>
<tr>
<td>3.5 – 3.9</td>
<td>65ml</td>
<td>80ml</td>
</tr>
<tr>
<td>4.0 – 4.4</td>
<td>70ml</td>
<td>85ml</td>
</tr>
<tr>
<td>4.5 – 4.9</td>
<td>80ml</td>
<td>95ml</td>
</tr>
<tr>
<td>5.0 – 5.4</td>
<td>90ml</td>
<td>110ml</td>
</tr>
<tr>
<td>5.5 – 5.9</td>
<td>100ml</td>
<td>120ml</td>
</tr>
<tr>
<td>6.0 – 6.9</td>
<td>110ml</td>
<td>140ml</td>
</tr>
<tr>
<td>7.0 – 7.9</td>
<td>125ml</td>
<td>160ml</td>
</tr>
<tr>
<td>8.0 – 8.9</td>
<td>140ml</td>
<td>180ml</td>
</tr>
<tr>
<td>9.0 – 9.9</td>
<td>155ml</td>
<td>190ml</td>
</tr>
<tr>
<td>10.0 – 10.9</td>
<td>170ml</td>
<td>200ml</td>
</tr>
<tr>
<td>11.0 – 11.9</td>
<td>190ml</td>
<td>230ml</td>
</tr>
<tr>
<td>12.0 – 12.9</td>
<td>205ml</td>
<td>250ml</td>
</tr>
<tr>
<td>13.0 – 13.9</td>
<td>230ml</td>
<td>275ml</td>
</tr>
<tr>
<td>14.0 – 14.9</td>
<td>250ml</td>
<td>290ml</td>
</tr>
<tr>
<td>15.0 – 19.9</td>
<td>260ml</td>
<td>300ml</td>
</tr>
</tbody>
</table>
If the child has appetite the feeds should be provided orally. If the patient is unable to consume at least 75% of the milk provided a nasogastric tube should be inserted.

Children with SAM have weak muscles and swallow slowly. This makes them prone to develop aspiration pneumonia. Appropriate feeding techniques are therefore important;

- The child should ideally be sat up right on the carer’s lap against her/his chest, with one arm behind his back.
- The care giver’s arm encircles the child and holds a saucer under the child’s chin.
- Any dribbles that fall in to the saucer are returned to the cup.
- The child should never be force fed, have his/her nose pinched or lie back and have the milk poured in to the mouth. (even with a spoon)
- Never give more therapeutic milk than what is prescribed for the child in Phase 1 even if the child cries for more food. The child may continue to breastfeed on demand
- Meal times should be sociable. The assistant should encourage the caregivers, talks to them, corrects any faulty feeding technique and observes how the child takes the milk
- The meals for the care-givers should not be taken beside the patient. It is almost impossible to stop the child demanding some of the caregiver’s meal; sharing of the caregiver’s meal with the child can be dangerous or the child in Phase 1.

In order to correlate the nutritional treatment with clinical recovery and any change in the weight of the child, the therapeutic milk intake must be accurately monitored and recorded. This is a vital part of the child’s medical and nutritional care.

The method of recording is described below:

**Recording milk intake**

It is vital to record milk intake accurately. On the Therapeutic Surveillance Sheet, an area of the chart is designated for monitoring milk intake.

Each feed time is associated with a box of 4 squares [see figure 17]. Each large square represents one feed at the indicated time of day and each small square represents ¼ of the feed given at each meal:
FIGURE 17 EXAMPLE OF HOW TO RECORD THE MILK INTAKE FOR ONE FEED

In the example in figure 17 above, the child took all of the milk but vomited back approximately 25% (the amount is estimated by the nurse with the help of the carer. The chart should be completed AFTER the feed has been given.

Figure 18 below gives an example of feeds between 0600 and 1500 hrs over 2 days. (NB: Feeds are offered throughout the 24hrs, the chart provided only offers an example of how to complete a portion of the form!)

On Day 1 the child is fed 100% of the 0600hrs feed using an HG tube. At 0900hrs, the child was able to take 50% orally (represented by the “x”) and 50% by NG tube. The 1200 /1500 hrs feeds were taken entirely orally.

On Day 2, at 0600 the child took the feed orally but vomited 25% of the feed. The child took the rest of the feeds 100% orally without any problems.

In this example, the child has taken all of the milk with almost no losses through vomiting. The appetite has improved since day 1 and the milk is taken orally. A child in Phase 1 should have the NG tube removed and be could be considered for Transition Phase based on the return of the appetite provided there are no other complications.

FIGURE 18 EXAMPLE OF A MILK MONITORING CHART FOR 2 DAYS

<table>
<thead>
<tr>
<th>Time</th>
<th>Day 1</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0600</td>
<td>NG</td>
<td>NG</td>
</tr>
<tr>
<td></td>
<td>NG</td>
<td>NG</td>
</tr>
<tr>
<td>0900</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>NG</td>
<td>NG</td>
</tr>
<tr>
<td>1200</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>1500</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

THERAPEUTIC MILK FEEDING SCHEDULE

Ideally infants and children should be given therapeutic milk 8 times per 24 hours (every 3 hours); this always the preferred option. In some circumstances it may not be possible to give 8 feeds per day according to the schedule due to staffing shortages, particularly during the evening or night shift. In these cases it is preferable to feed the child the proper amount of milk required over fewer feeds. It is essential that the prescription of milk is adjusted accordingly.

The risk of hypoglycaemia, especially during Phase 1, is reduced if the child receives the full amount of prescribed milk in 24hrs rather than being prescribed milk for 8 feeds but only receiving 6 or 7 due to staffing shortages.
Table 31 below indicates a suggested feeding schedule for 8 feeds and 6 feeds per day. The schedule for 6 feeds per day should be used routinely in Phase 2 care.

**TABLE 30 THERAPEUTIC MILK FEEDING SCHEDULE FOR 8 FEEDS AND 6 FEEDS PER DAY**

<table>
<thead>
<tr>
<th>TIME</th>
<th>06:00</th>
<th>09:00</th>
<th>12:00</th>
<th>15:00</th>
<th>18:00</th>
<th>21:00</th>
<th>24:00</th>
<th>03:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 feeds / 24hrs</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6 feeds/24 hrs</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>0</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>0</td>
</tr>
</tbody>
</table>

\( X = \text{Feed scheduled} \)
\( 0 = \text{Feed not scheduled} \)

**NB:** The reduced schedule of 6 feeds should not be used routinely in Phase 1 or Transition Phase as a matter of convenience for staff. It is applicable only where severe staff shortages are so severe that the lack of care will be detrimental to the child. The reduced schedule of feeds should be a temporary measure until staffing problems are resolved.

**MEDICAL MANAGEMENT IN PHASE 1**

Epidemiological data indicates that most children with SAM often present with infection although the signs and symptoms of infection may be masked due to the reduced function of the immune and inflammatory systems. All children should be treated on admission with broad spectrum antibiotics.

**SYSTEMATIC ANTIBIOTIC TREATMENT**

The type of antibiotic given in Phase 1 primarily depends on whether the child presents to the inpatient unit with or without complications:

If complications are **NOT** present:

**TABLE 31 ROUTINE ANTIBIOTICS FOR SAM WITHOUT COMPLICATIONS**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Prescription</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin</td>
<td>20 mg / kg Orally</td>
<td>8 hourly</td>
<td>On admission for 7 Days</td>
</tr>
</tbody>
</table>

**OR**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Prescription</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotrimoxazole</td>
<td>25mg Sulfamethoxazole + 5mg Trimethoprim Orally</td>
<td>12 hourly</td>
<td>On admission for 7 Days</td>
</tr>
</tbody>
</table>

Amoxicillin is the recommended first line antibiotic for SAM. Cotrimoxazole may be given instead of Amoxicillin at the discretion of the health staff for cases presenting with diarrhoea.
If complications **ARE** present:

**TABLE 32 ROUTINE MEDICATIONS FOR SAM WITH COMPLICATIONS**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Route</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>IM/IV</td>
<td>50 mg/kg</td>
<td>On admission 6 hourly for 2 days</td>
</tr>
<tr>
<td>Followed by</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>Orally</td>
<td>20 mg/kg</td>
<td>8 hourly for 5 days</td>
</tr>
</tbody>
</table>

**AND**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Route</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentamycin*</td>
<td>IM/IV</td>
<td>7.5 mg/kg</td>
<td>On admission once daily for 7 days</td>
</tr>
</tbody>
</table>

* Amikacin may be substituted for Gentamycin

If child does not improve within 48 hrs or deteriorates within 24 hrs, add:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Route</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftriaxone</td>
<td>IM/IV</td>
<td>75-100 mg/kg</td>
<td>once daily with Gentamycin</td>
</tr>
</tbody>
</table>

**OTHER SYSTEMATIC MEDICATIONS**

**Vitamin A**

A single dose of vitamin A is given on admission if not given in the last month. Patients presenting with measles or eye signs must be given Vitamin A doses on days of 1, 2 and 14.

**TABLE 33 VITAMIN A SCHEDULE FOR THE INPATIENT TREATMENT OF SAM**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Age</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>6 – 12 months</td>
<td>100,000 IU</td>
</tr>
<tr>
<td></td>
<td>greater than 12 months</td>
<td>200,000 IU</td>
</tr>
</tbody>
</table>

**Deworming**

Antihelminthics are not given in Phase 1. These medications are absorbed through the gut and the active metabolite generated in the liver. Early in treatment poor absorption in the gut and poor liver function may render the drug ineffective.

**Folic Acid**

Folic acid is present in therapeutic milks and RUTF. If moderate to severe anaemia is diagnosed then give a stat dose of 5 mg on admission. There is no requirement for daily doses.

**Measles vaccination**

Children with SAM treated in inpatient care should be vaccinated for measles on admission from 6 months of age. The dose should be repeated on discharge from inpatient care Phase 2 or when the child reaches 9 months in the outpatient setting.

**Antimalarial**

Follow national protocol
Other medications

**Zinc**
Zinc is present in F75 and F100 therapeutic milks and in RUTF. Episodes of diarrhoea should be treated with antibiotics and ReSoMal if indicated by the presence of dehydration.

**Iron**
Iron is not given in Phase 1. Iron increases the risk of mortality through the increased risk of infection and sepsis. Iron is given only in Phase 2 where it is added to the therapeutic milk (see phase 2 care). Iron tablets do not need to be given to children receiving RUTF as iron is present already present in RUTF in the correct amounts.

**MONITORING THE CHILD IN PHASE 1**
The minimum standard for monitoring in Phase 1 is outlined below. The recording of monitoring data is needed to properly manage the child with SAM. Data is frequently not recorded due to the shortage or inexperience of staff, however, the importance of the accuracy of the data should be emphasised, it should never be entered falsely.

After every therapeutic milk feed:
- Record any breastfeeding taken before the therapeutic milk
- Amount of therapeutic feed taken

Every 12 hours;
- Measure and record the child’s temperature
- Measure and record the child’s respirations
- Measure and record the child’s pulse rate

On a daily basis
- Indicate the prescription for therapeutic milk
- Measure and record the weight
- Measure and record the level of oedema
- Record symptoms such as cough
- Indicate if the child has a nasogastric tube

Where a child has a complication or is undergoing fluid rehydration the monitoring needs to be much closer and should be indicated by the clinical staff on an individual patient basis.

On a weekly basis:
- Measure MUAC

**CRITERIA TO PASS FROM PHASE 1 TO TRANSITION PHASE**
The progress of each child through Phase 1 is different according to their individual condition. Phase 1 normally lasts from 1-3 days although there is no fixed time in Phase 1. A child in Phase 1 may progress to transition Phase when all of the following are present;
- Appetite has returned (child takes > 90% of its milk orally)
- Oedema is reducing (maximum acceptable oedema in transition is +2. Oedema +3 remains in Phase 1)
• IMCI danger signs or other complications are resolving and child is clinically improved
• No nasogastric tube is present

**NB:** There are no anthropometric criteria for the child to progress to transition Phase. F75 is designed to stabilise the physiological condition of the child. **There is no expectation for weight gain in Phase 1.** Indeed there should be weight loss in children with oedema.

The appetite may be estimated from the charted milk intake (if this is kept accurately) or by direct observation of the child completing the milk feed by the staff. It is **NOT** sufficient or reliable to ask the carer if the milk is taken. It is frequently the case that carers will not feed the child if they are sleeping and may discard the milk or drink it themselves.

The resolving oedema may be estimated by the level of oedema (+1, +2, +3) and by the appropriate loss of weight. A child with +3 oedema remains at high mortality risk and must remain in Phase 1 until the oedema has reduced to at least +2. The oedema does not need to resolve completely in Phase 1.

It is not necessary for medical complications to be completely resolved for a child to progress to transition Phase. It is likely that any emergency issues such as hypoglycaemia or severe dehydration will have been resolved completely. However treatment for infections may be on going and may be continued in transition Phase and Phase 2. The child must be clinically improved to progress to transition Phase (e.g. a child with pneumonia may still be on antibiotic treatment but respirations have returned to normal or high fever is resolving).

**FAILURE TO RESPOND TO TREATMENT IN PHASE 1**

The management of children in Phase 1 is intensive. However it may be expected that the child will have stabilised in 1-3 days. If the child has not progressed to transition Phase they must undergo a complete clinical reassessment. The day of admission is counted as day 0 (zero).

The criteria for failure to respond are;

• Failure to improve appetite by day 4
• Failure to improve the general clinical condition by day 4
• Failure to begin to lose oedema by day 4
• Still oedema is exist by day 10

There are many reasons why a child may fail to respond;

**Problems with the care delivery**

• Failure to apply the medical protocol appropriately
• Failure to apply the nutrition protocols appropriately
• Unhygienic environment for malnourished children
• Excessively strict or intimidating staff
• Failure to properly educate the carer on feeding practices
• Failure to chart information appropriately (or false monitoring / recording of feeding)
• Poorly trained or insufficient staff
• F75 not prescribed, made or administered properly
Problems of individual children

- A severe medical complication has not shown signs of improvement
- Drug toxicity
- Insufficient therapeutic milk feed taken orally or by NG tube
- Child’s therapeutic milk taken by siblings or carer
- Sharing of carers food with the SAM child
- Malabsorption
- Psychological trauma
- Rumination (a type of psychological disturbance)
- Infections (particularly viral) resistant to antibiotics, antifungals
- Other serious underlying disease / congenital abnormality / errors of metabolism

TRANSITION PHASE FOR CHILDREN 6 – 59 MONTHS

Transition Phase signals a change in the nutritional management of the child. The amount of energy provided in transition Phase in increased by 30% and the amount of protein is increased. This is possible because of the restoration of physiological systems which are indicated by the return of appetite, the reduction of oedema and the improvement in the clinical status of the child.

Transition may be divided into two distinct management approaches.

1. Transition Phase where OPD-SAM¹ is available
2. Transition Phase where OPD-SAM is not available

Availability in this sense primarily means that outpatient care must be available AND accessible to the carer following discharge from the hospital. If outpatient care is available then the child may be transferred to outpatient care to continue treatment until full recovery. If it is not available the child must remain in the inpatient care unit until full recovery / cure is achieved according to established criteria.

TRANSITION PHASE FOR SAM CHILDREN 6 – 59 MONTHS WHO WILL BE TRANSFERRED TO OUTPATIENT CARE

The aim of care is to give the SAM child the right amount of diet appropriate to this phase and to prepare the child for transfer to outpatient care. This requires the child to transition to a diet of RUTF. This change to RUTF normally takes 2-3 days but may take longer.

In Phase 1 the child received 100 kcal / kg / day in energy. In transition Phase the child needs to increase this to 130 kcal / kg / day. When being discharged to outpatient care this amount must be provided in RUTF and gradually increased to ensure that the child will take adequate amounts of RUTF to gain weight and recover in the outpatient setting.

STEP BY STEP TRANSITION FROM F75 TO RUTF

While transitioning from F75 to RUTF the mother should be encouraged to continue breastfeeding on demand. The taking of an adequate amount of RUTF by the child relies on an improving appetite which is a sensitive indicator or physiological recovery. This may develop slowly over 2-3 days. The child must never be force fed. This is not a true indication
of appetite. In addition RUTF will be an unusual taste which the child may need to adapt to.

RUTF is a thick paste and plenty of clean drinking water should be available for the child to drink. Older children can ask for water when they are thirsty but young children must be offered the water regularly when taking RUTF. This is a vital part of the teaching to give to the mother; a thirsty child may refuse RUTF which may be mistaken for poor appetite.

At each scheduled feeding time (at least 5 times / day in transition Phase):

- Prepare F75 formula according to the prescription for the child’s weight
- Prepare a packet of RUTF and a glass of clean drinking water for the child
- The RUTF packet should be massaged thoroughly for 30 seconds before opening which helps to mix the ingredients together. This should be done in front of the carer to demonstrate the method. If the RUTF is hard (due to cold temperatures) first warm the RUTF gently by placing the packet close to the mothers body for 10 minutes then thoroughly mix before using.
- The carer should be instructed to wash their hands with soap and water
- Before offering the F75, offer the child RUTF
  - If the child is capable of holding the packet, the child should feed itself directly from the packet of RUTF with gentle encouragement from the mother
  - If the child cannot eat directly from the packet, the mother may take a small amount of RUTF on her clean finger and feed it to the child. The amount offered at each mouthful should be approximately the size of an almond.
- It should be emphasised that the child must NEVER be force fed
- After each mouthful, breast milk or a sip of water should be offered to the child
- Children over 6 months but with developmental delay in the motor skills associated with chewing food may have some difficulty manipulating the thick paste in the mouth, sips of water will help
- **UNDER NO CIRCUMSTANCES** should the RUTF be mixed with water / F75 or any other liquid before the child eats it
- record the amount taken of each type of feed on the patients treatment chart
- After each feed, the RUTF should be placed in a cool dry place, safe from insects and re-used at the next scheduled feeding time

**ASSESSMENT OF THE APPETITE FOR RUTF IN TRANSITION PHASE**

Table 34 below gives a simple guide to the amount of RUTF that must be taken at each feed and over 24 hours in transition phase. Feed the child 5 to 6 times per 24 hrs.

**TABLE 34 AMOUNT OF RUTF TO BE GIVEN IN TRANSITION PHASE**

<table>
<thead>
<tr>
<th>Weight of the child</th>
<th>Amount of RUTF at each feed</th>
<th>Amount to be eaten over 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 5kg</td>
<td>¼ packet</td>
<td>1 ¼ to 1 ½ packets</td>
</tr>
<tr>
<td>&gt; 5kg</td>
<td>1/3 packet</td>
<td>1 ¾ to 2 packets</td>
</tr>
</tbody>
</table>

1Term of OTP has been changed to OPD-SAM in this guideline.
The child should be observed closely for any signs of deterioration during the transition Phase. It is not unusual for children to pass several very soft stools during the recovery process of the intestinal tract. Unless there are signs of;

- Re-feeding syndrome or
- Acute watery diarrhoea or
- Osmotic diarrhoea (unusual with low osmolarity F75)

There is no need to treat the diarrhoea unless the child loses weight. The child should continue RUTF and be observed closely; the diarrhoea should not be treated with Zinc.

If the child fails to eat the required amount of RUTF

If the child fails to eat the required amount at each feed, the child should finish the feed by drinking the ration of F75 in addition to any RUTF which has been eaten. The time taken to eat the RUTF and F75 (if necessary) should be no more than 1 hour. The process of offering both RUTF and F75 continues until the child is able to take the required amount at each feed for 24 hours. If the appetite of the child does not improve over 2-3 days reassess the child and change the treatment regimen.

1. If there is deterioration in clinical status return the child to Phase 1
2. If the child is stable but appetite is not improving after 3 days in transition Phase (the required amount of each feed is not being taken) change the diet to F100 for transition Phase as described in the next section

If the child is able to take the required amount of RUTF

If the child takes the required amount of RUTF at each feed for a period of 24 hours, F75 may be discontinued and the child is given only RUTF and breast milk or water. The amount of RUTF taken by the child should be increased to the amount indicated in table 35 below.

The carer should ensure that no other foods are given to the child at this stage. Family foods may only be introduced when the child is transferred to outpatient care.

The child should be observed for any deterioration in clinical condition which may require transfer back to Phase 1 care. When the full amount prescribed above is eaten in 24 hours the child may then start taking the amount required to recover adequately at home. The amount required may be taken from the look-up table below.

**TABLE35 AMOUNT OF RUTF TO BE GIVEN TO THE CHILD ON TRANSFER TO OUTPATIENT CARE**

<table>
<thead>
<tr>
<th>Weight of the child, kg</th>
<th>Packets per week</th>
<th>Packets per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-3.9</td>
<td>11</td>
<td>1.5</td>
</tr>
<tr>
<td>4.0-4.9</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>5.0-6.9</td>
<td>18</td>
<td>2.5</td>
</tr>
<tr>
<td>7.0-8.4</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>8.5-9.4</td>
<td>25</td>
<td>3.5</td>
</tr>
<tr>
<td>9.5-10.4</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>10.5-11.9</td>
<td>32</td>
<td>4.5</td>
</tr>
<tr>
<td>≥12</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>
It is vital that the carer is instructed in the proper use of RUTF at home. Key messages for using RUTF are provided in section 4.

The child should continue to finish the complete course of any oral antibiotics. Routine medications for children with SAM should not be repeated when the child is discharged to outpatient care.

**PREPARATION FOR DISCHARGE**

**NOTE:** Before discharging clients, provide counselling for the mothers *(following page 19)*

And before the child is discharged from the inpatient care unit the following should be done as well;

- A health facility offering outpatient care for SAM should be available and accessible to the carer
- The carer must consent to continued care in outpatient treatment
- An adequate supply of RUTF must be given to last until the next possible appointment in outpatient care
- The carer must understand (and repeat) the key messages for giving RUTF
- The carer must understand (and repeat) the medications which must be given after discharge
- Call the relevant health facility and Community Health Supervisor and notify them of the child's transfer to outpatient care
- Complete a transfer slip [annex 23, section 4] and give it to the carer. This should be presented to the staff of the outpatient (care at the) health facility at the next appointment
- Record the following on the transfer slip;
  - Hospital registration / treatment number
  - MUAC (measurement)
  - Weight (measurement)
  - Height (measurement)
  - Weight for Height Z score
  - Grade of oedema
  - Ration of RUTF given (number of packets on discharge)
  - Medications to be continued after discharge
  - Clinical condition on discharge
- Record the child as a “transfer to outpatient care” in the tally sheet / monthly report
- Record the ration of RUTF given in the stock register
- Complete other relevant clinical records and registers

**TRANSITION PHASE FOR CHILDREN AGED 6-59 MONTHS WHEN OUTPATIENT CARE IS NOT AVAILABLE**

In Phase 1 the child received 100 kcal / kg / day in energy. In transition Phase the feed needs to increase to 130 kcal / kg / day. When there is no outpatient treatment available, the child must be treated and cured entirely within the inpatient (care) setting.

In transition Phase, for children remaining in inpatient care, the energy required is 130 kcal / kg / day. This is given in the form of F100 therapeutic milk. F100 contains 100 kcal / 100 ml of milk. This means that when the milk is changed from F75 to F100 in transition Phase, the
volume of milk the child has been receiving in Phase 1 remains the same; only the type of milk changes. The child should continue to breastfeed on demand.

NB: If a child aged more than 6 months weighs less than 4kg, the child should be treated according to protocols indicated in section 7.

Preparation of DF 100

<table>
<thead>
<tr>
<th>WEIGHT OF THE CHILD (KG)</th>
<th>6 FEEDS/PER DAY</th>
<th>5 FEEDS/PER DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3.0</td>
<td>F100 full strength should not be used</td>
<td></td>
</tr>
<tr>
<td>3.0–3.4</td>
<td>75 ml per feed</td>
<td>85 ml per feed</td>
</tr>
<tr>
<td>3.5–3.9</td>
<td>80</td>
<td>95</td>
</tr>
<tr>
<td>4.0–4.4</td>
<td>85</td>
<td>110</td>
</tr>
<tr>
<td>4.5–4.9</td>
<td>95</td>
<td>120</td>
</tr>
<tr>
<td>5.0–5.4</td>
<td>110</td>
<td>130</td>
</tr>
<tr>
<td>5.5–5.9</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>6.0–6.9</td>
<td>140</td>
<td>175</td>
</tr>
<tr>
<td>7.0–7.9</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>8.0–8.9</td>
<td>180</td>
<td>225</td>
</tr>
<tr>
<td>9.0–9.9</td>
<td>190</td>
<td>250</td>
</tr>
<tr>
<td>10.0–10.9</td>
<td>200</td>
<td>275</td>
</tr>
<tr>
<td>11.0–11.9</td>
<td>230</td>
<td>275</td>
</tr>
<tr>
<td>12.0–12.9</td>
<td>250</td>
<td>300</td>
</tr>
<tr>
<td>13.0–13.9</td>
<td>275</td>
<td>350</td>
</tr>
<tr>
<td>14.0–14.9</td>
<td>290</td>
<td>375</td>
</tr>
<tr>
<td>15.0–19.9</td>
<td>300</td>
<td>400</td>
</tr>
</tbody>
</table>

**Criteria to return to Phase 1**

A child in transition Phase receiving either F100 or RUTF should be returned to Phase 1 if any of the following signs are observed:

- Rapid increase in the size of the liver
- Any sign of fluid overload
- If tense abdominal distension occurs
- If there is any significant re-feeding diarrhoea involving weight loss
- If there is any complication arising which necessitates intravenous fluids
- Any increasing oedema or oedema develops when it was previously absent
- Any other significant deterioration in the child’s condition

If a child has deteriorated after progressing to transition Phase it is usually due to one of the following:

- Re-feeding syndrome
- Re-activation syndrome
- Osmotic diarrhoea resulting from a change in diet (less common with low osmolarity feeds)
- Aspiration of the diet through improper feeding technique
- Nosocomial infection
• Inappropriate prescription / use of medications

**Re-feeding syndrome** is a complex metabolic reaction which occurs when the energy or nutrient load on the body causes a rapid shift of electrolytes and fluid between compartments in the body. Convulsions, heart failure and rapid death may occur as a result of hypophosphatemia and fluid overload.

**Re-activation syndrome** occurs when a previously undiagnosed infection becomes apparent. This may occur as a result of the recovery of the immune and / or inflammatory system rather than the development of a newly acquired infection.

In any case of failure to respond or deterioration of the child’s condition a thorough reassessment is needed. The physician should consider;

• A detailed recent history
• Accuracy of previous record keeping
• Full medical examination and review of nutritional status
• Review previous medical and nutritional therapy
• Chest x-ray / laboratory investigations
• Use of un-prescribed medicines or food
• A review of the care environment (hygiene, staffing, milk preparation)
• Appropriate use and / or recalibration of measurement equipment
• Referral may be required to a specialist paediatric service

When the child is returned to Phase 1 the milk diet is changed back to F75

**CRITERIA TO TRANSFER TO PHASE 2**
To transfer to Phase 2, the following must occur;

• The child must have good appetite (takes > 90% of prescribed therapeutic milk orally)
• Oedema must have subsided completely

**PHASE 2 TREATMENT FOR CHILDREN AGED 6-59 MONTHS WHEN OUTPATIENT CARE IS NOT AVAILABLE**
In Phase 2, the energy and protein intake of the child is increased to 200 kcal/kg/day giving F100 therapeutic milk. During Phase 2, iron is added to the therapeutic milk. The amount of iron to be added is;

• 200 mg Ferrous Sulphate (1 tablet) in 2 litres therapeutic milk
• 100 mg Ferrous Sulphate (1/2 tablet) in 1 litre therapeutic milk

If smaller quantities of milk are being made, crush 100mg (1/2 iron tablet) and mix thoroughly in 10 ml of water (ensure the tablet is well crushed and leaves no sediment).

• 10 mg Ferrous Sulphate (1 ml of 10 ml Iron solution) in each 100 ml of therapeutic milk

**AMOUNT OF F100 MILK TO GIVE IN PHASE 2**
Table x below gives the volume of F100 therapeutic milk to be given in Phase 2. Feeds should be given at least 5 times per day. The table gives milk volumes depending on whether 5 or 6 feeds per day are given.
TABLE 37 AMOUNT OF F100 MILK TO BE GIVEN IN PHASE 2 FOR (SAM) CHILDREN AGED 6-59 MONTHS

<table>
<thead>
<tr>
<th>Weight of the child in Kg</th>
<th>F100 Therapeutic Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 feeds per day</td>
</tr>
<tr>
<td>&lt; 3.0 kg</td>
<td>Use Dilute F100</td>
</tr>
<tr>
<td>3.0 to 3.4</td>
<td>110</td>
</tr>
<tr>
<td>3.5–3.9</td>
<td>125</td>
</tr>
<tr>
<td>4.0–4.9</td>
<td>135</td>
</tr>
<tr>
<td>5.0–5.9</td>
<td>160</td>
</tr>
<tr>
<td>6.0–6.9</td>
<td>180</td>
</tr>
<tr>
<td>7.0–7.9</td>
<td>200</td>
</tr>
<tr>
<td>8.0–8.9</td>
<td>215</td>
</tr>
<tr>
<td>9.0–9.9</td>
<td>225</td>
</tr>
<tr>
<td>10.0–11.9</td>
<td>230</td>
</tr>
<tr>
<td>12.0–14.9</td>
<td>260</td>
</tr>
<tr>
<td>15.0–19.9</td>
<td>300</td>
</tr>
</tbody>
</table>

MEDICINES TO BE GIVEN IN PHASE 2

Deworming

Deworming treatment is given in Phase 2 (day 7) when the child remains as an inpatient.

TABLE 38 DEWORMING MEDICATION TO BE GIVEN IN PHASE 2 OF INPATIENT CARE FOR CHILDREN AGED > 12 MONTHS

<table>
<thead>
<tr>
<th>Medication</th>
<th>Age</th>
<th>Dose</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mebendazole</td>
<td>12 – 23 months</td>
<td>250 mg</td>
<td>Single dose on day 7</td>
</tr>
<tr>
<td></td>
<td>24 months or older</td>
<td>500 mg</td>
<td>Single dose on day 7</td>
</tr>
</tbody>
</table>

FOLLOW UP CARE IN THE INPATIENT UNIT DURING TREATMENT

During treatment in Phase 2 the child should continue to be monitored until recovery. Observations should be recorded systematically on the Therapeutic Surveillance Sheet.

Daily observations

- Record milk intake after each feed
- Measure weight
- Assess oedema
- Measure respiratory rate
- Measure heart rate
- Measure temperature
- Assess clinical status (vomiting, diarrhoea, dehydration, cough)
- Assess nutritional status against discharge criteria
Weekly observations
  ➢ Measure MUAC

Two-weekly observations
  ➢ Measure height / length

Play and emotional stimulation
During Phase 2 children should be stimulated with play and emotional stimulation as an aid to psychological recovery.
  ➢ Encourage the carer to talk to the child with good eye contact during feeding
  ➢ Provide a brightly coloured ward environment
  ➢ Provide toys suitable for children of various ages (see annex 32)

Failure to respond in phase 2
Failure to respond in phase 2 may be diagnosed when there is:
  ➢ Failure to gain weight by at least 5kg / kg / day
  ➢ Failure to reach discharge criteria after 21 days of treatment
  ➢ Any clinical deterioration

Discharge criteria for children aged 6 to 59 months from inpatient care for SAM
Table 39 describes the discharge criteria from Phase 2 care for children aged 6 to 59 months. The anthropometric criteria must have been at or above discharge criteria for 2 consecutive measurements.

**TABLE 39 DISCHARGE CRITERIA FOR CHILDREN AGED 6 TO 59 MONTHS FROM INPATIENT CARE FOR SAM**

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured</td>
<td>For admissions by MUAC&lt;br&gt; MUAC ≥ 12.5cm (for 2 consecutive days)</td>
</tr>
<tr>
<td></td>
<td>For admissions by WFH/L&lt;br&gt; WFH/L ≥ -2 Z scores (for 2 consecutive days)</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>Oedema is absent for at least 2 weeks</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>Clinically well</td>
</tr>
<tr>
<td>Defaulter</td>
<td>Absence from IPD-SAM for 3 consecutive days</td>
</tr>
<tr>
<td>Died</td>
<td>Dies whilst in inpatient care</td>
</tr>
<tr>
<td>Non cured</td>
<td>Patient has not reached discharge criteria after 2 months</td>
</tr>
</tbody>
</table>
**PREPARATION FOR DISCHARGE**

Before the child is discharged from the IPD-SAM the following should be done:

- The carer must understand (and repeat) the medications which must be given after discharge
- Record the child as a “Cured” in the tally sheet / monthly report
- Complete other relevant clinical records and registers
- Complete a transfer slip and advise the carer to attend the nearest local health facility;
  - Record the child’s registration number on all documentation
  - Record the MUAC and WFH (measurement on discharge)
  - Record any continuing medications (should they be on medication on discharge?)
  - Advise attendance at a growth monitoring programme
  - Advise attendance at the local health facility for further nutrition counselling

**FOLLOW UP AFTER DISCHARGE**

The child being treated for (severe) acute malnutrition has usually suffered some combination of nutritional deficit and / or infection which arise as a result of many factors. In order to continue healthy growth and prevent relapse follow up care is ALWAYS required. Depending on services available locally, the following should be considered.

- On-going IYCF / nutrition counselling
- Enrolment in a growth monitoring programme
- Referral to Well Baby Clinic
- Referral to a food security programme (such as SFP)
- Referral to any relevant social service programme

**REPORTING**

Admissions and discharges for IPD-SAM services are reported on the same format as used for outpatient SAM services. Formats for the monthly reports are given in annex 25, section 4. Each month the discharge outcomes for inpatient SAM are calculated and submitted with the report. On electronic formats the monthly discharge outcomes are calculated automatically. The bottom line of the equation for discharge outcomes is the total number of discharges from treatment.

\[
\text{Total discharges} = \text{Cured} + \text{Died} + \text{Defaulted} + \text{Non-cured} + \text{Transfer to outpatient SAM}
\]
TABLE 40 CALCULATION OF DISCHARGE OUTCOMES FOR MAM / SAM

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of discharge cured</td>
<td>number of children cured that month x 100 total number of discharges from outpatient treatment that month</td>
</tr>
<tr>
<td>Percentage of discharge died</td>
<td>number of children died that month x 100 total number of discharges from outpatient treatment that month</td>
</tr>
<tr>
<td>Percentage of discharge defaulted</td>
<td>number of children defaulted that month x 100 total number of discharges from outpatient treatment that month</td>
</tr>
<tr>
<td>Average length of stay</td>
<td>total number of days of treatment for all discharged cured cases total number of discharged cured cases</td>
</tr>
</tbody>
</table>

Average weight gain

Average weight gain (AWG) is calculated separately for children with wasting and those with oedema. Treatment records for children discharged cured each month are separated into the wasting and oedema and the AWG calculated as below.

For cases admitted with wasting
First calculate the weight gain of each child discharged cured

\[
\text{Weight gain} = \frac{(\text{Discharge weight in g} - \text{Admission weight in g})}{\text{Admission weight in kg}} \times \frac{1}{\text{Length of stay (in days)}}
\]

Weight gain from this calculation is expressed in g / kg / day

\[
\text{Average weight gain} = \frac{\text{Total weight gain of all wasted children discharged cured}}{\text{Total number of wasted children discharged cured}}
\]

For cases admitted with oedema
The weight gain for cases of oedema is calculated from the as the weight gain from the time all oedema has resolved until discharge.

\[
\text{Weight gain} = \frac{(\text{Discharge weight in g} - \text{Minimum weight in g})}{\text{Minimum weight in kg}} \times \frac{1}{\text{Time from minimum weight to discharge cured (in days)}}
\]

\[
\text{Average weight gain} = \frac{\text{Total weight gain of all oedematous children discharged cured}}{\text{Total number of oedematous children discharged cured}}
\]
STANDARDS OF SERVICE

The standard of services for Inpatient Department of SAM can be assessed from the indicators calculated above for monthly reporting. Standards for each indicator are given in table 41 below.

TABLE 41 STANDARDS OF SERVICE FOR INPATIENT DEPARTMENT FOR SAM

<table>
<thead>
<tr>
<th>Indicator</th>
<th>MoPH standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure + Transfer to outpatient SAM</td>
<td>Greater than 75%</td>
</tr>
<tr>
<td>(where outpatient SAM services exist)</td>
<td></td>
</tr>
<tr>
<td>Cure (inpatient only available)</td>
<td>Greater than 75%</td>
</tr>
<tr>
<td>Default</td>
<td>Less than 15%</td>
</tr>
<tr>
<td>Died</td>
<td>Less than 10%</td>
</tr>
<tr>
<td>Average LOS (if outpatient available)</td>
<td>7 to 10 days</td>
</tr>
<tr>
<td>Average LOS (inpatient only available)</td>
<td>21 to 28 days</td>
</tr>
<tr>
<td>Average weight gain</td>
<td>Greater than 8 g / kg / day</td>
</tr>
</tbody>
</table>

Where standards of service do not comply with the standards indicated in table 41 above, a narrative report should explain the reasons for the differences and what action is being taken to address the issues.

MONITORING & SUPPORTIVE SUPERVISION

Performance checklists for use in monitoring visits are included in annex 33 at the end of this section. Monitoring visits should be conducted every 3 months. A copy of the monitoring visit report should be submitted to the Provincial Nutrition Officer and to the Public Nutrition Department at national level.

Clinical records, protocols and the care environment should be examined in detail to identify any problems where patients may be failing to respond (see annex 34) and take corrective measures.

When coverage assessments are available the effectiveness of the service can be assessed according to the following equation;

\[ \text{Effectiveness} = \text{Cure rate} \times \text{Coverage}^* \]

* Coverage should be evaluated using an accepted methodology. Indirect calculations of coverage derived from estimates of expected numbers of cases is not acceptable for evaluation purposes.
### ANNEX 29 ELIGIBILITY CRITERIA FOR INFANTS AND CHILDREN AGED LESS THAN 5 YEARS

| Children aged 6 to 59 months | Children 6-59 months admitted even with good appetite and no medical complications  
Bilateral pitting oedema +++  
or Marasmic Kwashiorkor*  
(* WFH/L less than -3Z scores or MUAC less than 11.5 cm with any grade of oedema)  

| Children 6-59 months admitted with SAM + Poor appetite or medical complications | MUAC less than 11.5 cm  
or WFH/L less than -3Z scores  
or bilateral oedema + and ++  
**With**
- Poor appetite for RUTF  
or any of the following IMCI danger signs or medical complications:  
  - High fever  
  - Hypothermia  
  - Persistent vomiting  
  - Severe dehydration  
  - Severe anaemia  
  - Not alert, very weak, apathetic, unconscious, convulsing  
  - Moderate to severe skin lesions  
  - Difficult or fast breathing  

| Children 6-59 months referred from OPD- SAM | Any of the following:  
- Deterioration in medical condition (has developed IMCI danger sign)  
- Increase in bilateral oedema  
- Weight loss for 3 consecutive weeks or static weight for 5 weeks  
- Non-recovery after 3 months in OPD- SAM  

| Children 6-59 months referred from OPD-MAM (where no OPD-SAM is available) | MUAC less than 11.5 cm  
or WFH/L less than -3Z scores  
or bilateral pitting oedema of any grade  
- Child is older than 6 months but weighs less than 4 kg  

| Infants aged less than 6 months | WFH/L less than – 3Z sores (for infants equal or greater than 45cm)  
- Bilateral pitting oedema of any grade  
- Visible severe wasting + IMCI danger sign  
- Infant fails to gain weight despite breastfeeding counselling in the community  
- Infant is too weak to suckle effectively |
## Annex 30

### Composition of ORS, Low Osmolarity ORS (LO-ORS) and Resomal (With Recipes to Make Resomal)

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>Standard ORS</th>
<th>LO- ORS</th>
<th>ReSoMal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>111</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>Sodium</td>
<td>90</td>
<td>75</td>
<td>45</td>
</tr>
<tr>
<td>Potassium</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Chloride</td>
<td>80</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>Citrate</td>
<td>10</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Magnesium</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Zinc</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
</tr>
<tr>
<td>Copper</td>
<td>-</td>
<td>-</td>
<td>0.045</td>
</tr>
<tr>
<td>Osmolarity</td>
<td>311</td>
<td>245</td>
<td>300</td>
</tr>
</tbody>
</table>

### How to Make Resomal from Standard ORS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO – Standard ORS</td>
<td>1 Pkt. Of Standard packet for 1 litre</td>
</tr>
<tr>
<td>Sucrose</td>
<td>50 g</td>
</tr>
<tr>
<td>Potassium</td>
<td>4 g</td>
</tr>
<tr>
<td>Water</td>
<td>2 litres</td>
</tr>
</tbody>
</table>

### How to Make Resomal from Low Osmolarity ORS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO – Low Osmolarity ORS</td>
<td>1 Pkt of LO-ORS for 1 litre</td>
</tr>
<tr>
<td>Sugar</td>
<td>40 g</td>
</tr>
<tr>
<td>CMV</td>
<td>1 level scoop</td>
</tr>
<tr>
<td>Water</td>
<td>1700 ml</td>
</tr>
</tbody>
</table>
### ANNEX 31  RECIPES FOR F75 AND F100

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Ingredient</th>
<th>Amount for F-75</th>
<th>Amount for F-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Dried Skimmed Milk (DSM)</td>
<td>Dried skimmed milk</td>
<td>25 g</td>
<td>80 g</td>
</tr>
<tr>
<td></td>
<td>Sugar</td>
<td>70 g</td>
<td>50 g</td>
</tr>
<tr>
<td></td>
<td>Cereal flour</td>
<td>35 g</td>
<td>60 g</td>
</tr>
<tr>
<td></td>
<td>Vegetable oil</td>
<td>30 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CMV mix*</td>
<td>20 ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water to make 1000 ml</td>
<td>1000 ml</td>
<td>1000 ml</td>
</tr>
<tr>
<td>Using Dried Whole milk (DWM)</td>
<td>Dried whole milk</td>
<td>35 g</td>
<td>110 g</td>
</tr>
<tr>
<td></td>
<td>Sugar</td>
<td>70 g</td>
<td>50 g</td>
</tr>
<tr>
<td></td>
<td>Cereal flour</td>
<td>35 g</td>
<td>30 g</td>
</tr>
<tr>
<td></td>
<td>Vegetable oil</td>
<td>20 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CMV mix*</td>
<td>20 ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water to make 1000 ml</td>
<td>1000 ml</td>
<td>1000 ml</td>
</tr>
<tr>
<td>Using Full Cream Fresh Cow’s Milk</td>
<td>Full cream fresh cow’s milk</td>
<td>300 ml</td>
<td>880 ml</td>
</tr>
<tr>
<td></td>
<td>Sugar</td>
<td>70 g</td>
<td>75 g</td>
</tr>
<tr>
<td></td>
<td>Cereal flour</td>
<td>35 g</td>
<td>20 g</td>
</tr>
<tr>
<td></td>
<td>Vegetable oil</td>
<td>20 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mineral mix*</td>
<td>20 ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Add water to make up to 1000 ml</td>
<td>1000 ml</td>
<td></td>
</tr>
</tbody>
</table>

* Combined Mineral and Vitamin mix (CMV) must be used to ensure the proper micronutrient balance
ANNEX 32 PLAY AND EMOTIONAL STIMULATION

**Ring on a string (from 6 months)**
Thread cotton reels and other small objects (e.g. cut from the neck of plastic bottles) on to a string. Tie the string in a ring, leaving a long piece of string hanging.

**Rattle (from 12 months)**
Cut long strips of plastic from coloured plastic bottles. Place them in a small transparent plastic bottle and glue the top on firmly.

**Drum (from 12 months)**
Any tin with a tightly fitting lid.

**Mirror (from 18 months)**
A tin lid with no sharp edges.

**In-and-out toy (from 9 months)**
Any plastic or cardboard container and small objects (not small enough to be swallowed).

**Posting bottle (from 12 months)**
A large transparent plastic bottle with a small neck and small long objects that fit through the neck (not small enough to be swallowed).

**Blocks (from 9 months)**
Small blocks of wood. Smooth the surfaces with sandpaper and paint in bright colours, if possible.

**Stacking bottle tops (from 12 months)**
Cut at least three identical round plastic bottles in half and stack them.

**Push-along toy (from 12 months)**
Make a hole in the centre of the base and lid of a cylindrical-shaped tin. Thread a piece of wire (about 60 cm long) through each hole and tie the ends inside the tin. Put some metal bottle tops inside the tin and close the lid.

**Pull-along toy (from 12 months)**
As above, except that string is used instead of wire.

**Nesting toys (from 9 months)**
Cut off the bottom of two bottles of identical shape, but different size. The smaller bottle should be placed inside the larger bottle.

**Puzzle (from 18 months)**
Draw a figure (e.g. a doll) in a crayon on a square- or rectangular-shaped piece of cardboard. Cut the figure in half or quarters.

**Doll (from 12 months)**
Cut out two doll shapes from a piece of cloth and sew the edges together, leaving a small opening. Turn the doll inside-out and stuff with scraps of materials. Stitch up the opening and sew or draw a face on the doll.

**Book (from 18 months)**
Cut out three rectangular-shaped pieces of the same size from a cardboard box. Glue or draw a picture on both sides of each piece. Make two holes down one side of each piece and thread string through to make a book.
## Monitoring Checklist for In-Patient Department of SAM in Health Facilities

### Identification

<table>
<thead>
<tr>
<th>q1</th>
<th>Date: Year( )/ Month( )/ Day( )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>q2</th>
<th>Location: Province( )/ District( )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>q3</th>
<th>Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other( ), HF ID:</th>
</tr>
</thead>
</table>

### Input Indicators

<table>
<thead>
<tr>
<th>SN</th>
<th>Questions</th>
<th>Answers</th>
<th>Remarks</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>q4</td>
<td>Are there adequate staff for them /IPD-SAM?</td>
<td>1. No</td>
<td>0 doctor, 2 nurse, 1 cleaner/ cook at all time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q5</td>
<td>Have health facility staff received training on management of severe acute</td>
<td>1. No</td>
<td>One week standard training according to MoPH guideline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>malnutrition?</td>
<td>2. Yes, but</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>not certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Yes, certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q6</td>
<td>Is there at least one copy accessible MoPH guidelines on management of</td>
<td>1. No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>severe acute malnutrition?</td>
<td>2. Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q7</td>
<td>Are there IEC materials (posters, take- home-brochures, flipcharts) on</td>
<td>1. No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>management of severe malnutrition available in the HF?</td>
<td>2. Yes, not</td>
<td>Appropriately: Visible, readable, Adequate: enough for distribution (based on caseload)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>appropriate/Adequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Yes, appropriate/Adequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>q8</td>
<td>Are there adequate number of forms and formats necessary for MSM?</td>
<td>1. No</td>
<td>TSS, MSS, home treatment card, Follow up card,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Yes, not</td>
<td>register book, W/H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>adequate/complet e</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Q9  | Is there the flow chart of operational guideline visible in the wall? | 1. No,  
2. Yes, but not appropriate | Appropriate: Visible, readable |
|-----|------------------------------------------------------------------|----------------------------------|-------------------------------|
| Q10 | Are there adequate equipment for the centre?                     | 1. No  
2. Yes, not adequate/complete* | Baby scale, measuring board, Salter scale, MUAC tape, Beds, toys |
| Q11 | Are there enough supplies for management of severe malnutrition available in the health facility? | 1. No  
2. Yes, not adequate/complete*  
3. Yes, adequate/complete | F75, F100, Plumpy-nut, CMV, Resomal (at least for one month) |
| Q12 | Are there enough pharmaceuticals available to treat severe malnutrition? | 1. No  
2. Yes, not adequate/complete*  
3. Yes, adequate/complete | Regular drug supply, Antibiotics 1st and 2nd line, (based on monthly case load), Vit A, Iron, Folic acid |
| Q13 | Are there enough utensil to prepare food for children?           | 1. No  
2. Yes, not adequate/complete*  
3. Yes, adequate/complete | |
| Q14 | Is there appropriate facilities for mothers to bath and do laundry? | 1. No  
2. Yes, but not | |
| **Process** |  |  | |
| Q15 | Are the admission and discharge criteria followed correctly according to the protocol? | 1. No,  
2. Yes, admission, not discharge  
3. Yes discharge not admission  
4. Yes admission and discharge | |
| Q16 | Are transfer of patients from phase I to phase II and so on done correctly according to the protocol? | 1. No,  
2. Yes | |
| Q17 | Do the health staffs provide counseling to the clients            | 1. No  
2. Yes, not adequate  
3. Yes, adequate | (cause of malnutrition, consequences, prevention, management, follow |
<table>
<thead>
<tr>
<th>q18</th>
<th>Does the doctor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Make good interview of the mothers</td>
</tr>
</tbody>
</table>
|     | 1. No  
|     | 2. Yes |
| b   | Make complete clinical examination |
|     | 1. No  
|     | 2. Yes |
| c   | Write the complete feeding prescription |
|     | 1. No  
|     | 2. Yes |

<table>
<thead>
<tr>
<th>q19</th>
<th>Are the rooms’ temperature adequate for malnourished children?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes  
|     | 27-30°C |

<table>
<thead>
<tr>
<th>q20</th>
<th>Are children weight and height measured and interpreted</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes  
|     | According to z-score table |

<table>
<thead>
<tr>
<th>q21</th>
<th>Is therapeutic milk prepared properly (based on protocol)?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes  
| Properly: Measurements correct, dishes clean, safe water, ingredients available |

<table>
<thead>
<tr>
<th>q22</th>
<th>Are children fed according to the schedule and recorded correctly?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes, feeding or recording not correct  
|     | 3. Yes, feeding and recording correct  
|     | According to the patients file |

<table>
<thead>
<tr>
<th>q23</th>
<th>Are the staff able to wash their hands with water and soap?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes  
|     | Availability, soap, water, sink, clean towel |

<table>
<thead>
<tr>
<th>q24</th>
<th>Do the children have access to adequately equipped play room?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes appropriate, no enough toys  
|     | 3. Yes appropriate,  
|     | |

<table>
<thead>
<tr>
<th>q25</th>
<th>Are mothers able to wash their hands with soap and water?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes  

Output

<table>
<thead>
<tr>
<th>q26</th>
<th>Check the registers for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Average number of admission/day during the last month:</td>
</tr>
</tbody>
</table>
|     | 1. No  
|     | 2. Yes  
|     |  
| b   | Correct registration of clients according to the |
|     | 1. No,  
|     | 2. Yes, but not  
|     | Filling all required  
| c   | Cure rate:  
| d   | Length of stay  
| e   | Default rate  

<table>
<thead>
<tr>
<th>q27</th>
<th>Are children's filing system completed correctly?</th>
</tr>
</thead>
</table>
|     | 1. No  
|     | 2. Yes |
Suggestion:

This checklist is filled in by the Supervisor/ Monitor: Name/

Signature:

Position:
and witnessed or certified by the in-charge of

the health facility: Name/ Signature:

Position:

ANNEX 34 ADDRESSING FAILURE TO RESPOND TO TREATMENT

Reasons for failure to respond

- Failure to observe proper nutrition protocols
- Failure to observe proper medical protocols
- Problems with staffing
- Problems with hygiene
- Underlying undiagnosed clinical condition

Procedure to address failure to respond

- Check the child is receiving correct protocol according to their age
- Check the milk for each phase is being made correctly
- Check the child is prescribed the proper type of milk according to their age
- Check the child is receiving the proper type of milk according to the phase of treatment
- Check the child is prescribed the correct volume of milk according to their weight
- Check the child is receiving the proper number of feeds per day (ASK THE MOTHER)
- For children less than 6 months check the child is receiving the correct protocol according to whether the child is breastfed or not breastfed
- Check the child receiving SST is prescribed the correct type and amount of milk
- Check the child NOT receiving SST is prescribed the correct type and amount of milk according to the phase of treatment
- Check that iron is added to milk in phase 2
- Check that the child is being fed the milk by the carer
- Check for undiagnosed medical conditions
- Check that staffing is adequate to provide the standard of care (especially at night)
- Check that hygiene is properly observed by staff and patients


**SECTION 7: MANAGEMENT OF INFANTS AGED LESS THAN 6 MONTHS OR OLDER THAN 6 MONTHS BUT WEIGHING LESS THAN 4 KG**

This section contains the following sub-sections:

- Eligibility criteria for children aged less than 6 months
- Management of Infants aged less than 6 months
  - Care for infants less than 6 months who have a possibility of being breastfed
  - Care for infants less than 6 months who do not have a possibility of being breastfed
- Management of infants aged 6 months of older but weighing less than 4 kg

Whenever possible, an infant aged less than 6 months should be managed as an outpatient unless the infant also presents with an IMCI danger sign. The mother should attend the local health centre and receive counselling on breastfeeding in order to improve or re-establish effective breastfeeding. If after individual counselling the mother does not report improved breast milk intake or if the infant fails to gain weight the child should be managed as an inpatient.

Infants aged less than 6 months treated as inpatients require different protocols than older children. This is because these infants have an immature physiology and feeding them the wrong diet may result in renal solute overload. In addition, medications should be given in smaller doses.

Infants aged 6 months or older but weighing less than 4 kg are also treated with Diluted F100 instead of full strength F100.

Infants aged less than 6 months admitted to inpatient care may be treated and discharged according to two separate and distinct protocols. **It is important to ensure that the infant follows the correct treatment plan and discharged according to the correct criteria.**

The two options for treatment are:

1. Children who are currently breastfeeding or will be breastfed on discharge
2. Children who will not be breastfed on discharge

Option 1 differs from other treatment criteria in that there are no separate ‘Phases’ of treatment. The amount of milk the child received decreases during treatment as the intake of breast milk improves.

In option 2, there are distinct Phases of treatment as for older children using modified criteria for each Phase. The amount of milk the child receives increases in each phase.

It is a common occurrence for mothers to report that they have insufficient breast milk to feed the child. Children may also become malnourished due to being bottle fed in unhygienic conditions, with cow’s milk or having breastfeeding mixed with any other type of fluid or food. Any of these conditions exposes the child to an increased risk of morbidity and mortality.
It is always preferable when an infant becomes malnourished to attempt to improve the breastfeeding practices or to re-establish them if they have been discontinued. Inpatient staff should always try to encourage the re-establishment of breastfeeding and discharge the child aged less than 6 months when feeding and gaining weight on breast milk alone.

Re-establishing breastfeeding requires skilled and patient counselling. A method known as the supplementary suckling technique (SST) also takes some skill and patience on the behalf of the staff and the mother but has proven an effective method to re-establish adequate breastfeeding.

Commercial milk formulas are inherently dangerous. They make false claims about their suitability for infants and young children and expose the child to a higher risk of death. If at all possible staff must:

- Ban the use of commercial infant formulas whilst in inpatient care
- Indicate to the mother that therapeutic milk is different and is a ‘medical milk’
- Remove any milk formula the carer is carrying and discard it (unless the mother drinks it herself)
- Strongly discourage the use of commercial formulas after discharge except where the carer / mother refuses to attempt breastfeeding or re-establishing breastfeeding has proved unsuccessful.

All health facility management and all staff should abide by the milk marketing code and not promote the use of commercial infant formulas (or any milk) in any way whatsoever either in counselling, health education or any positive behaviour towards their use.

Where mothers are not able to breastfeed successfully the next best option is to encourage ‘wet nursing’ by a female member of the family. It is possible for the grandmother or other female relative to re-establish breastfeeding and nurse the child until they reach 6 months of age. The mother or ‘wet nurse’ should always be encouraged to continue breastfeeding at least until the child reaches 2 years of age.

**CARE OF THE MOTHER**

The admission of an infant aged less than 6 months into inpatient care is always a worrying time for the mother but is also an opportunity to ensure she receives proper nutrition counselling for her and the infant.

Care for the mother should include:

- Inform the mother of the importance of the therapeutic milk and its timely feeding to the child according to the inpatient unit timetable
- Other ward routines for meal times, washing of clothes and attending to hygiene needs must be discussed as soon as possible after admission - Why is this is not noted for the 6-59 inpatient care?
- Measure the MUAC of the mother. If the mother’s MUAC is < 23 cm refer to the section on lactating women with infants aged < 6 months in this guideline
- Counsel the mother on maternal nutrition and self-care
- Counsel the mother on the importance of exclusive breastfeeding for a child < 6 months
Staff should counsel strongly against the use of commercial formula milks (or other milks) which should be distinguished from the (medical) therapeutic milks used in inpatient care

Staff should remove and discard any baby bottles on admission of the infant. Their use is banned in In-Patient Department for SAM

If the mother brought commercial milk formula with her, she may drink it herself to improve her own nutritional status but it should NEVER be fed to the child during the infant’s time in inpatient care.

The mother should receive multiple micronutrient tablets daily during admission.

Eligibility criteria for infants aged less than 6 months

TABLE 42 ELIGIBILITY CRITERIA FOR INFANTS AGED LESS THAN 6 MONTHS

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria (Infants less than 6 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New admissions</td>
<td>WFL&lt; -3Z scores</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>Bilateral pitting oedema grade + or ++ or +++</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>Visible severe wasting + IMCI danger sign</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>Infant fails to gain weight despite outpatient IYCF counselling</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>Infant is too weak to suckle effectively</td>
</tr>
<tr>
<td>Returned Defaulter</td>
<td>Child has previously defaulted and has returned to inpatient care</td>
</tr>
<tr>
<td></td>
<td>(the infant must meet admission criteria to be re-admitted)</td>
</tr>
</tbody>
</table>

NB: MUAC should NOT be used on infants less than 6 months old

If an infant can be diagnosed with SAM using WFH/L or oedema then they can be referred to inpatient care for SAM. In other cases the infant should be referred irrespective of their anthropometry

1. Visible severe wasting + IMCI danger sign

An infant may be too small (less than 45 cm) to be measured using weight for height and MUAC cannot be used in infants aged less than 6 months but may have visible severe wasting. If the infant has no IMCI danger sign IYCF counselling should be given and the infant reassessed within one week. If the child fails to gain weight following IYCF counselling they may be referred to inpatient care according to that criterion (number 2 below).

An infant with any IMCI danger sign should be referred to the paediatric ward, however any infant with visible severe wasting + any IMCI danger sign should be referred to Inpatient Department for SAM.

2. Infant fails to gain weight despite breastfeeding counselling

If an infant is seen in the OPD or growth monitoring programme and the mother reports or if it observed that the infant is not gaining weight the health staff should assess the breastfeeding practice of the carer. If the infant has no IMCI danger signs or other complications and appears to be strong enough to breastfeed, the infant should be weighed.
The carer is counselled to ensure proper breastfeeding technique is being used and that mixed feeding is not taking place. Any minor infections should be treated at the first visit and the carer requested to return to the OPD after 1-2 weeks (or sooner if the infant's condition gets worse at home).

The infant should have gained at least 20g / day since the first visit to OPD. On return to the OPD for the second visit:

- Reweigh the infant
- If the infant has not gained or has lost weight, refer to IPD-SAM
- If the infant has gained less than 20g / day since the first visit, continue counselling and observation of the infant as an outpatient while continuing to treat any minor infections
- If the infant has gained more than 20g / day, the infant may be discharged from care and the carer referred to receive continued IYCF counselling / growth monitoring

If the infant has any IMCI danger sign on examination at any time they should be referred to hospital as an emergency.

3. **Infant is too weak to suckle effectively**

If the infant is too weak to suckle effectively they will not be able to respond to IYCF counselling and should be referred to Inpatient Department for SAM immediately.

**NUTRITIONAL CARE FOR INFANTS AGED LESS THAN 6 MONTHS**

**OPTION 1: CARE FOR INFANTS LESS THAN 6 MONTHS WHO HAVE A POSSIBILITY OF BEING BREASTFED**

For this group, dietary management is not divided into the separate phases. The aim of treatment is to stimulate breast-feeding and to supplement the child's diet with Diluted F100 therapeutic milk until breast milk is sufficient to allow the child to grow properly. Breast milk output is stimulated by the Supplemental Suckling Technique (SST); it is important to put the child to the breast as often as possible. As breastfeeding improves and the child gains weight the amount of therapeutic milk is gradually reduced and then discontinued. The infant is then discharged when gaining weight on breast milk alone.

Diluted F100 is not equivalent to F75. Diluted F100 contains approximately the same energy as F75 however the amount of protein and the amounts and balance of micronutrients are different.

**NB:** If an infant aged less than 6 months is admitted with oedema they are always treated with F75 until the oedema resolves. When oedema has resolved the therapeutic milk may be changed for diluted F100.

**PREPARATION OF DILUTED F100**

One small packet (114g) of F100 is diluted with 670 ml of water (instead of 500ml) to make Diluted F100.

If smaller amounts are required, F100 which has already been made up can be diluted further. For each 100 ml of F100 add 35 ml of water to make Diluted F100.
STARTING AMOUNT OF Diluted F100 (or F75 for cases with oedema) to give using SST

The starting amounts of Diluted F100 to use, when using SST, is given in table 43 below.

TABLE 43 STARTING AMOUNTS OF Diluted F100 (or F75 for cases with oedema) TO USE FOR THE SUPPLEMENTARY SUCKLING TECHNIQUE FOR INFANTS AGED LESS THAN 6 MONTHS

<table>
<thead>
<tr>
<th>Weight of infant (kg)</th>
<th>Amount of Diluted F100 8 feeds per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>equal or less than 1.2kg</td>
<td>25 ml</td>
</tr>
<tr>
<td>1.3 – 1.5 kg</td>
<td>30 ml</td>
</tr>
<tr>
<td>1.6 – 1.7 kg</td>
<td>35 ml</td>
</tr>
<tr>
<td>1.8 – 2.1 kg</td>
<td>40 ml</td>
</tr>
<tr>
<td>2.2 – 2.4 kg</td>
<td>45 ml</td>
</tr>
<tr>
<td>2.5 – 2.7 kg</td>
<td>50 ml</td>
</tr>
<tr>
<td>2.8 – 2.9 kg</td>
<td>55 ml</td>
</tr>
<tr>
<td>3.0 – 3.4 kg</td>
<td>60 ml</td>
</tr>
<tr>
<td>3.5 – 3.9 kg</td>
<td>65 ml</td>
</tr>
<tr>
<td>4.0 – 4.4 kg</td>
<td>70 ml</td>
</tr>
</tbody>
</table>

- Breast-feed every 3 hours for at least 20 minutes, more often if the child cries or seems to want more.
- Between one half and one hour after a normal breast-feed give maintenance amounts of Diluted F100 using table 38 above using the supplementary suckling technique (see below)
- If space is available, infants should be nursed in a separate space from the older malnourished children. This can be a “breastfeeding corner”. This area may be useful to bring breastfeeding mothers together for mutual support and counselling by staff
- F75 is not necessary unless the infant has oedema

SUPPLEMENTARY SUCKLING TECHNIQUE

The supplementation is given using a tube the same size as n°8 NGT (a size n°5 tube can be used, but the therapeutic milk should be strained through cotton wool to remove any small particles that would block the tube).

Method
- Diluted F100 is put in a cup and the mother holds it
- The end of the NG tube is put in the cup.
- The tip of the tube is put on the breast at the nipple and the infant is offered the breast in the normal way so that the infant attaches properly. Sometimes at the beginning the mothers find it better to attach the tube to the breast with some tape.
- 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 taken by the infant. It is like taking a drink through a straw.
- At first an assistant needs to help the mother by holding the cup and the tube in place. She encourages the mother confidently. Later the mothers nearly always manage to hold the cup and tube without assistance.
- At first, the cup should be placed at about 5 to 10cm below the level of the nipple so the milk does not flow too quickly and distress the infant. And the weak infant does not have to suckle excessively to take the milk. As the infant becomes stronger the cup should be lowered progressively to about 30cm below the breast.
- The mother holds the tube at the breast with one hand and uses the other for holding the cup. Some mothers find it more convenient if the tube is held in place with a strip of tape, but this is not normally necessary.
- 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.
- By far the best person to show the mother the technique is another mother who is using the technique successfully. Once one mother is using the SS technique successfully the other mothers find it quite easy to copy her.
- The mother should be relaxed. Excessive or officious instructions about the correct positioning or attachment positions often inhibit the mothers and make her think the technique is much more difficult than it is. Any way in which the mother is comfortable and finds that the technique works is satisfactory.
- If the therapeutic milk is changed (e.g. F75 to Diluted F100) the infant may take a few days to become used to the new taste. It is preferable to continue with the same supplementary diet throughout the treatment.

**FIGURE 19 SUPPLEMENTARY SUCKLING TECHNIQUE**

![Photo of a mother and infant using the supplementary suckling technique.](Source: Action Contre la Faim (ACF))

This infant is suckling the breast and also getting the Diluted F100 (130ml/kg/d) using the supplemental suckling technique. Raising or lowering the cup determines the ease with which the infant gets the supplement.

For very weak infants it can be at the level of the infant’s mouth; **Never position the cup higher than this level** as the feed can flow into the child’s mouth by siphoning and expose the child to danger of aspiration.

As the suckling becomes stronger the position of the cup relative to the child’s mouth may be lowered.
**Cleaning the tube**

After feeding the tube is flushed through with clean water using a syringe. It is then spun (twirled) rapidly to remove the water in the lumen of the tube by centrifugal force. If convenient the tube is then left exposed to direct sunlight.

**FOLLOW UP DURING TREATMENT**

The infant should be weighed daily using an infant scale accurate to 10g or 20g.

- For cases with wasting, if the child takes all of the Diluted F100 but loses weight for 3 consecutive days, increase the amount of Diluted F100 given by 5ml
- If the child gains 20g or more per day for 2 days, reduce the amount of Diluted F100 by half and reassure the carer that the child is beginning to breastfeed effectively
- If the child continues to gain 10g or more per day on the reduced amount of Diluted F100 then stop giving Diluted F100 and continue breastfeeding alone
- If the child continues to gain weight on breast milk alone, they may be discharged irrespective of their WFH/L

**ALTERNATIVE TO SST**

If the supplementary suckling technique is not working or the skilled staff required to use the SST are not available, expressing the breast milk by hand and then feeding the infant using a cup is possible.

**FIGURE 20 HOW TO HAND EXPRESS BREAST MILK AND CUP FEED**

- Make sure your hands and utensils are clean
- Wash your hands with soap and running water
- Clean and boil the container you will use to collect your breast-milk
- Get comfortable
- It is sometimes helpful to gently stroke your breasts. A warm cloth may help stimulate the flow of milk
- Put your thumb on the breast above the dark area round the nipple (areola) and the other fingers on the under side of the breast behind the areola
- With your thumb and first 2 fingers press a little bit in towards chest wall and then press gently towards the dark area (areola)
Milk may start to flow in drops, or sometimes in fine streams. Collect the milk in the clean container.

Avoid rubbing the skin, which can cause bruising, or squeezing the nipple which stops the flow of milk.

Rotate the thumb and finger positions and press/compress and release all around the areola

Express one breast for at least 3 to 5 minutes until the flow slows, then express the other breast, then repeat both sides again (20 to 30 minutes total)

Store breast milk in a clean, covered container. Milk can be stored 6 to 8 hours in a cool place and up to 72 hours in the back of the refrigerator

Give baby expressed breast milk from a cup. Bring cup to the baby's lower lip and allow baby to take small amounts of milk, lapping the milk with his or her tongue. Do not pour the milk in to baby's mouth

Pour just enough breast milk from the clean covered container in to the feeding cup

Bottles are unsafe to use because they are difficult to wash and can be easily contaminated

Continue with care protocols as described above as if the child was breastfed by SST

When the child is gaining weight, give breastfeeding counselling and attempt to re-establish breastfeeding

OPTION 2: CARE OF INFANTS AGED LESS THAN 6 MONTHS WHO HAVE NO POSSIBILITY OF BEING BREASTFED

Children who have no prospect of being breastfed must be treated using therapeutic milk. If the child is aged less than 6 months on discharge then the child must continue on commercial milk formula until the age of 6 months and then complementary feeding is introduced.

It is ALWAYS preferable to try to re-establish exclusive breastfeeding rather use commercial milk formula. The use of milk formulas should be seen as a last resort.

The treatment of infants aged less than 6 months with no prospect of breastfeeding occurs in the three phases similar to older children aged 6 to 59 months. The major difference for infants is the use of Diluted F100 during all 3 phases unless the infant is admitted with oedema in which case F75 is used until the oedema has resolved.

- Phase 1: Diluted F100 at 100 kcal / kg / day (8 feeds per day)
- Transition Phase: Diluted F100 at 130 kcal / kg / day (8 feeds per day)
- Phase 2: Diluted F100 at 200 kcal / kg / day (6 feeds per day)

The criteria for children to pass from Phase 1 to Transition Phase and from Transition phase to Phase 2 are the same as for older children aged 6 to 59 months old [see section 6]

AMOUNT OF DILUTED F100 TO GIVE FOR INFANTS AGED LESS THAN 6 MONTHS WITH NO PROSPECT OF BEING BREASTFED

Table x below indicates the amount of Diluted F100 to be given for infants less than 6 months with no prospect of being breastfed
TABLE 44 AMOUNT OF DILUTED F100 (OR F75 FOR CASES WITH OEDEMA) TO GIVE FOR INFANTS AGED LESS THAN 6 MONTHS WITH NO PROSPECT OF BEING BREAST FED

<table>
<thead>
<tr>
<th>Weight of the infant</th>
<th>Phase 1 8 feeds per day (ml)</th>
<th>Transition Phase* 8 feeds per day (ml)</th>
<th>Phase 2 6 feeds per day (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>equal or less than 1.5 kg</td>
<td>30</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>1.6 – 1.8 kg</td>
<td>35</td>
<td>45</td>
<td>70</td>
</tr>
<tr>
<td>1.9 – 2.1 kg</td>
<td>40</td>
<td>55</td>
<td>80</td>
</tr>
<tr>
<td>2.2 – 2.4 kg</td>
<td>45</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>2.5 – 2.7 kg</td>
<td>50</td>
<td>65</td>
<td>100</td>
</tr>
<tr>
<td>2.8 – 2.9 kg</td>
<td>55</td>
<td>75</td>
<td>110</td>
</tr>
<tr>
<td>3.0 – 3.4 kg</td>
<td>60</td>
<td>80</td>
<td>120</td>
</tr>
<tr>
<td>3.5 – 3.9 kg</td>
<td>65</td>
<td>85</td>
<td>130</td>
</tr>
<tr>
<td>4.0 – 4.4 kg</td>
<td>70</td>
<td>95</td>
<td>140</td>
</tr>
</tbody>
</table>

* If the infant is admitted with oedema, all of the oedema must have resolved before progressing to Phase 2

During Phase 2 the Diluted F100 may be substituted with commercial milk formula appropriate to the child’s weight according to the instructions on the tin / packet. It is essential that if the infant is to be discharged home on commercial milk formula (which is a last resort) then the carer must be shown how to make the formula safely and using the correct dilution. The carer should be advised NOT to over-dilute the formula to make it last longer.

MEDICAL MANAGEMENT FOR INFANTS AGED LESS THAN 6 MONTHS

Routine medicines for children less than 6 months are given on admission as described in table 46 below;

TABLE 45 ROUTINE ANTIBIOTICS FOR CHILDREN AGED LESS THAN 6 MONTHS

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Prescription</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>50,000 iu</td>
<td>Single dose</td>
<td>On admission</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>20 mg / kg</td>
<td>8 hourly</td>
<td>On admission for 7 Days</td>
</tr>
<tr>
<td></td>
<td>Orally</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gentamicin</td>
<td>7.5 mg / kg IM /IV</td>
<td>Once per day</td>
<td>On admission for 7 days</td>
</tr>
</tbody>
</table>
### DISCHARGE CRITERIA FOR CHILDREN < 6 MONTHS

If an infant is less than 6 months old and if at time of discharge infant is more than 6 months old must teach the mother about continued breastfeeding and introduction of complementary feeding.

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Cured</td>
<td>Child is gaining weight more than 20g/day on breast milk alone* for 3 consecutive days and Oedema is absent for 10 consecutive days and Clinically well</td>
</tr>
<tr>
<td>*Children being breastfed</td>
<td></td>
</tr>
<tr>
<td>Cured</td>
<td>WFH/L equal or greater than -2 Z scores** (for an infant equal or more than 45cm) and Oedema is absent for 10 consecutive days and No medical problems</td>
</tr>
<tr>
<td>*Children with no prospect of being breast fed</td>
<td></td>
</tr>
<tr>
<td>Defaulter</td>
<td>Absent from inpatient unit for 3 consecutive days</td>
</tr>
<tr>
<td>Died</td>
<td>Child dies while in inpatient care</td>
</tr>
</tbody>
</table>

* All therapeutic milk must have been stopped. The weight gain must be entirely due to breast milk

** If infant is less than 45cm and WFH/L cannot be calculated, the child should be discharged when gaining weight at more than 20g / day for 3 consecutive days on commercial milk formula alone.
**NUTRITIONAL CARE FOR CHILDREN AGED 6 MONTHS OR OLDER BUT WEIGHING LESS THAN 4 KG**

The objective of management of children who are more than 6 months old and have SAM but weigh less than 4 kg is to get the mother to continue breast-feeding while giving her infant the supplements required at this stage of development. In a child more than 6 months old who weighs less than 4kg, growth is seriously retarded. The child has probably been born with low birth weight and has then failed to grow after birth. The best chances of life are probably to return to predominant breast-feeding.

Where an infant is > 6 months but <4kg;

a) The mother should be encouraged to breast-feed the child and the **supplementary suckling technique** should be applied as it is for children less than 6 months

1. Breast-feed every 3 hours for at least 20 minutes, more often if the child cries or seems to ask for more.
2. One hour after breast-feeding give maintenance amounts of **F100-diluted** using the supplementary suckling technique.

b) The nutritional protocol consists of three phases: an initial treatment phase during which the energy intake is progressively increased, a rapid weight-gain phase while the infant still weighs less than 4kg, and then a further rapid weight-gain phase once the infant has reached 4kg.

**At the start of the treatment, and until the infant reaches 4kg, the diet is based on F100-diluted.**

The quantity of F100-diluted is gradually increased.

<table>
<thead>
<tr>
<th>DAY 1 and DAY 2: F100-diluted – 130ml/kg/day, divided in 8 feeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAY 3 and DAY 4: F100-diluted – 150ml/kg/day, divided in 8 feeds</td>
</tr>
<tr>
<td>DAY 5 and DAY 6: F100-diluted – 170ml/kg/day, divided in 8 feeds</td>
</tr>
<tr>
<td>FROM THE 7th DAY: F100-diluted enriched with iron – 200ml/kg/day, divided in 8 feeds</td>
</tr>
</tbody>
</table>

**As soon as the child reaches 4 kg, F100-diluted is replaced by F100** (same protocol as for infants over 6 months weighing more than 4kg).

- When the child reaches 4 kg the therapeutic milk may be changed to full strength F100
- Where possible the preference remains to re-establish breastfeeding which should be continued until at least the age of 2 years
- Counselling regarding proper, age appropriate, counselling on complementary feeding prior to discharge is absolutely vital for children in this category
**DISCHARGE**
- Discharge protocols follow the protocols for children aged 6 to 59 months [see section 6]

**CARE OF THE MOTHER IN THE CENTRE IF THE MOTHER IS BREAST-FEEDING HER CHILD.**
The mother should receive the same care as the mothers of infants <6 months: 4 meals with micronutrients including one porridge in the afternoon.

**FOLLOW UP AFTER DISCHARGE**
The child being treated for acute malnutrition has usually suffered some combination of nutritional deficit and / or infection which arise as a result of many factors [see section 1]. In order to continue healthy growth and prevent relapse follow up care is **ALWAYS** required. Depending on services available locally, the following should be considered.

- On-going IYCF / nutrition counselling
- Enrolment in a growth monitoring programme
- Referral to Well Baby Clinic
- Referral to SFP if available
- Referral to any relevant social service programme

**REPORTING, STANDARDS OF SERVICE AND SUPPORTIVE SUPERVISION**
The monthly reporting format is the same as that for older children with SAM and is given in **annex 25 section 4**. The standards of service and supportive supervision follow the guidelines for older children. There is no standard for rate of weight gain for infants being breastfed.