



Islamic Republic of Afghanistan
Ministry of Public Health
General Directorate of Preventive Medicine
Public Nutrition Directorate

**Integrated Management of Acute Malnutrition
Operational Guide**

January 2018

Foreword

The Public Nutrition Directorate (PND) of Ministry of Public Health (MoPH) through the technical support of UNICEF and nutrition partners revised the Integrated Management of Acute Malnutrition (IMAM) Package comprises of guidelines and operational guidelines/ job aids.

From 1996 onwards, multiple interventions strengthened the management of acute malnutrition in Afghanistan. In 2003, when the PND was established, UNICEF and WHO supported the development of national Severe Acute Malnutrition (SAM) guidelines to standardize treatment. In 2008, the PND introduced Community based Therapeutic Care (CTC) and revised the guidelines to include outpatient care. Subsequent revisions of the CMAM and IMAM guidelines in 2010 and 2014 further improved the acute malnutrition treatment protocols. The 2010 revision added outpatient care and the 2014 revision aligned the treatment protocols with the 2013 WHO Update on SAM evidences. Subsequently, based on 2014 national IMAM guideline, a Standard Operating Procedure (SOP) for IMAM was developed. The health actors involved in the management of acute malnutrition had identified gaps in the latest 2014 IMAM guideline and operational guideline, and a comprehensive review of the guidelines was being suggested in-order to further contextualize and adopt the guideline and operational guideline in different level of service delivery points.

Hence, in 2017 PND with the support of UNICEF hired an international IMAM expert to revise the IMAM package based on scientific evidences, international experience, update WHO recommendation and contextualize the guideline and the operational guideline for Afghanistan.

The consultant with the support of Afghanistan's IMAM technical working group members conducted an in-depth literature review, field review, situation analysis and revised the IMAM package accordingly.

The revised IMAM package including operational guideline will assist health agents (managers and care providers) in the management of acute malnutrition in community based and health facility based primary care and secondary care. The MoPH is pleased to urge implementation of this document as national operational guideline through all levels of health system for combating the problem of malnutrition in Afghanistan.



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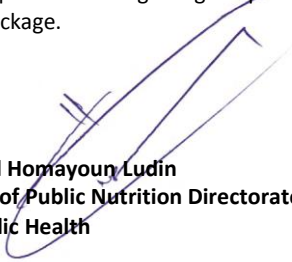
Acknowledgements

Ministry of Public Health (MoPH) acknowledges with all gratitude the substantial technical contribution of those who involved in the harmonization, standardization and revision of Integrated Management of Acute Malnutrition (IMAM) package (guideline, operational guideline and job aids).

The Public Nutrition Directorate (PND) of MoPH would particularly like to thank the leadership of MoPH for continuous support and inspiration. The MoPH also thanks to UNICEF and especially to Ms. Hedwig Deconinck, international IMAM expert for the technical support and expertise in revision of IMAM package.

The MoPH also thank to assigned task force members of IMAM (WHO, WFP, UNICEF, MEDAIR, ACF, AADA, AKHS, SCI, RMNCH, CBHC, GCMU), BPHS/ EPHS implementing NGOs, nutrition cluster and all partners who involved in the revision process. Health professionals especially the paediatric specialists from Indragandi, Maiwand and Ata Turk hospitals contributed to the revision and integration process. The MoPH thank them for their efforts.

MoPH would like to thank Ms. Piyali Mustaphi and Ms. Jecinter Oketch from UNICEF for providing strategic advices throughout the process of revision of IMAM package. Also we thank Dr. Shafiqullah Safi from Public Nutrition Directorate and Dr. Ahmad Nawid Qarizada from UNICEF for providing substantial technical and managerial support and for getting all pieces of work together to develop this fundamental package.



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Introduction

The Operational Guide for the Integrated Management of Acute Malnutrition (IMAM) consist(s) of key information that is presented in modules that can be combined for easy use and reference at the respective level of care. The modules present the same information as in the national guidelines in a concise form.

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Abbreviations and Acronyms

ART	Antiretroviral therapy
AWG	Average weight gain
BHC	Basic health centre
BPHS	Basic package of health services
CBHC	Community-based health care
CBNP(S)	Community-based nutrition package (services)
CHC	Comprehensive health centre
CHS	Community health supervisor
CHW	Community health worker
CMV	Combined mineral vitamin mix
DH	District hospital
EPHS	Essential package of hospital services
EPI	Expanded Programme for Immunisation
ER	Emergency room
ETAT	Emergency Triage Assessment and Treatment
FHA	Family Health Action (group)
FBNS	Facility-based nutrition services
Hb	Haemoglobin
HIV	Human immunodeficiency virus
HMIS	Health management information system
HP	Health post
HSC	Health sub-centre
IMAM	Integrated Management of Acute Malnutrition
IMNCI	Integrated Management of Neonatal and Childhood Illness
IM	Intramuscular
IV	Intravenous
IPD	Inpatient department
IYCF	Infant and young child feeding
L	Litre
LAZ	Length-for-age z-score
LOS	Length of stay
MAM	Moderate acute malnutrition
MCH	Mother and child health
MHNT	Mobile health and nutrition team
MN	Micronutrients
MOPH	Ministry of Public Health
MUAC	Mid-upper arm circumference
NCC	Nutrition Cluster Coordination
NG	Nasogastric
OPD	Outpatient department

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ORS	Oral rehydration solution
PCV	Packed cell volume
PCR	Polymerase chain reaction (test)
PH	Provincial hospital
PLW	Pregnant or lactating woman
PND	Public Nutrition Directorate
RDT	Rapid diagnostic test
ReSoMal	Rehydration solution for malnutrition
RH	Regional hospital
RUSF	Ready-to-use supplementary food
RUTF	Ready-to-use therapeutic food
SAM	Severe acute malnutrition
SHC	Sub health centre
SOP	Standard operating procedures
SST	Supplemental suckling technique
TB	Tuberculosis
UNICEF	United Nations Children's Fund
WAZ	Weight-for-age z-score
WFP	World Food Programme
WHO	World Health Organization
WHZ or WLZ	Weight-for-height (length) z-score; Weight-for-length z-score

MODULE 1. Introduction to IMAM

Job Aids:

- 1.1. Forms and Consequences of Malnutrition
- 1.2. Causes of Malnutrition
- 1.3. Pathophysiological Changes as a Consequence of Acute Malnutrition
- 1.4. Principles of the IMAM Approach
- 1.5. Integration of IMAM into the Afghanistan Health System

1.1. Forms and Consequences of Malnutrition

There are several forms of undernutrition:

- **Acute malnutrition** is characterised by a rapid deterioration in nutritional status over a short period, resulting in nutritional oedema, wasting, or nutritional oedema and wasting combined.
 - **Nutritional oedema** is an abnormal infiltration and excess accumulation of fluid in the body, identified by bilateral pitting oedema.
 - **Wasting** is sudden weight loss through loss of body fat and muscle tissue, identified by low body fat and muscle tissue in the mid-upper arm or inadequate weight for length or height.
- **Stunting** is characterised by growth retardation resulting from chronic undernutrition, identified by inadequate length or height for age.
- **Underweight** is a combined indicator of nutritional status, reflecting both chronic and acute malnutrition, identified by inadequate weight for age.
- **Micronutrient deficiencies** are the result of inadequate intake, absorption or utilization by the body of a specific vitamin or mineral and encompass a wide range of symptoms and disorders, identified by clinical examination or biomedical tests (see the *National Guidelines on Micronutrients*).

Acute malnutrition forms include:

- Moderate acute malnutrition (MAM)—defined by moderate wasting, and
- Severe acute malnutrition (SAM)—defined by nutritional oedema and/or severe wasting.

The presence of poor appetite and medical complications are clinical signs indicating the severity of disease progress and classifies SAM in uncomplicated and complicated SAM.

The terms marasmus (severe wasting), kwashiorkor (nutritional oedema) and marasmic-kwashiorkor (severe wasting and nutritional oedema combined) are used to describe the clinical manifestations of SAM. All

different forms of undernutrition can appear isolated or in combination, but most often overlap in one child or in a population.

Consequences of malnutrition for health and development

	Health consequences	Motor and cognitive development consequences	Economic consequences
Short-term	Increased risk of premature death Increased risk of infectious diseases such as diarrhoea, pneumonia and measles	Delayed motor skills (sitting, standing and walking) Delayed cognitive development (learning)	Health costs
Long-term	Increased risk of overweight later in life with associated higher risk of hypertension, coronary heart disease, stroke and type II diabetes Higher risk of complicated labour and retarded foetal growth	Delayed cognitive and language ability at 5 years of age Impaired learning in school Lower score in development tests and school performance	Lower aerobic capacity affecting physical work Reduced likelihood of formal employment 10% lower earning than non-stunted individuals 1% loss in adult height due to childhood stunting associated with 1.4% loss in economic productivity

1.2. Causes of Malnutrition

The UNICEF conceptual framework for malnutrition shows the relationship among the causal factors of malnutrition:

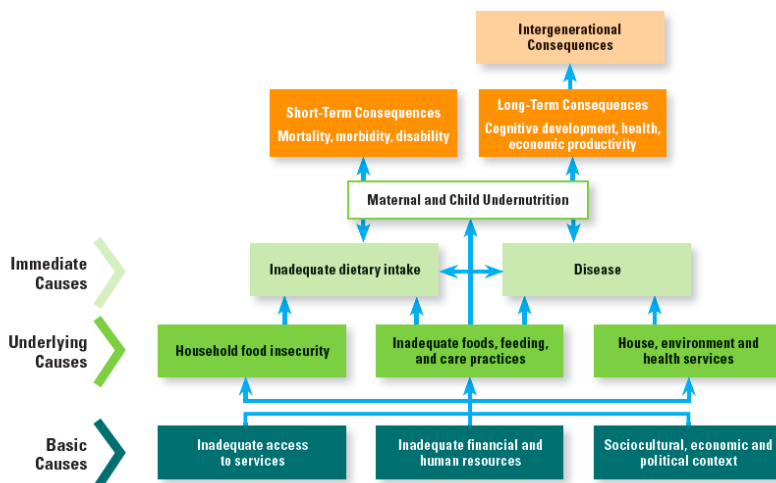


Figure: Conceptual framework for malnutrition

Immediate causes of malnutrition

The immediate causes of malnutrition affect individuals. Inadequate food intake (the quantity and quality of food required to provide adequate amounts of nutrients for health and growth) and disease are inextricably linked. Poor food intake may disturb biochemical processes, decreasing the function of every organ in the body. The reduced function of body systems may lead to the onset or worsening of other disease conditions. Infection may directly increase nutritional requirements because fever elevates body temperature and increases the rate of utilisation of nutrients. Vomiting and diarrhoea may adversely affect the absorption, utilisation and availability of nutrients because food does not pass through the gut in the usual way.

Underlying causes of malnutrition

Other factors may affect the immediate causes of malnutrition. These underlying causes are usually seen at the household or community level.

Adequate dietary intake for an individual is not possible if the food available in the household does not provide the diet needed to avoid malnutrition. Food insecurity exists when not 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. Inadequate dietary intake may also result from inadequate child or maternal care. For example, a child under 6 months of age may not be exclusively breastfed, or older infants may not receive adequate complementary feeding. Inadequate child healthcare may also cause disease. For example, a child may not be vaccinated against preventable diseases or household hygiene practices may be inadequate. Adequate and accessible vaccination services or proper hygiene facilities may not be available. An inadequate public health environment also contributes to the likelihood of infection or other diseases, ultimately leading to malnutrition.

Basic causes of malnutrition

The underlying causes of malnutrition may be related to other factors beyond the control of individuals and often communities. These factors include the international and national economy and national health and education infrastructure, which may make it difficult for a country to provide the health or education services required to prevent disease or provide education on eating a healthy diet.

1.3. Pathophysiological Changes as a Consequence of Acute Malnutrition

Organ system	Pathophysiological effects
Cardiovascular system	• Reduced cardiac output and stroke volume • Sudden increases in cardiovascular volume may result in heart failure • Reduced blood pressure that compromises tissue/organ perfusion
Gastrointestinal system	• Reduced production of gastric acid, compromising the first line of immunity • Decreased intestinal motility • Reduced production of digestive enzymes • Atrophied pancreas • Atrophied intestinal mucosa/microvilli allowing invasion of pathogens through the stomach wall, leading to diarrhoea • Reduced absorption of nutrients when large amounts of food are eaten • Disturbed normal gut flora, with an overgrowth of pathogenic bacteria
Liver function	• Production of abnormal metabolites of amino acids • Compromised detoxification of by-products of protein metabolism (ammonia) • Reduced storage of glycogen • Reduced gluconeogenesis, increasing the risk of hypoglycaemia • Reduced bile secretion • Reduced heat production (normally 1/3 of body requirements) • Reduced transferrin activity, limiting capacity to absorb and reduce iron
Genitourinary system	• Reduced renal perfusion and circulation time • Reduced glomerular filtration • Reduced sodium excretion • Low urinary phosphate output • Reduced ability to concentrate urine

Immune system	• Atrophied lymph glands, tonsils and thymus • Severely reduced cell-mediated T-cell immunity • Reduced IgA levels in secretions • Low complement components • Reduced production of phagocytes and inability to kill ingested bacteria efficiently • Diminished acute phase immune response • No normal inflammation or white cell migration resulting from tissue damage • Impaired hypothalamic temperature regulation
Endocrine system	• Reduced insulin production and increased glucose intolerance • Reduced Insulin Growth Factor (IGF-1) production • Reduced growth hormone production • Increased cortisol levels
Circulatory system	• Plasma volume usually normal • Reduced red cell volume
Homeostasis	• Basal metabolic rate reduced by 30% • Impaired temperature regulation, producing poikilothermy • Reduced energy expenditure through reduced activity • Reduced sodium pump activity • Increased permeability of cell membranes, leading to an increased intracellular sodium • Decreased intracellular potassium and magnesium
Skin, muscles and exocrine glands	• Atrophied skin and subcutaneous fat, leading to loose folds of skin • Unreliable normal signs of dehydration; eyes are sunken because of loss of subcutaneous fat in the orbit • Atrophied glands, including sweat, tear and salivary glands; dry mouth and reduced tears and sweat production. • Easily fatigued respiratory muscles; lack of energy
Psychology	• Irritability • Lethargy • Rumination after feeding • Developmental delays

1.4. Principles of the IMAM Approach

IMAM aims to reduce mortality and morbidity in children under 5 years of age due to acute malnutrition and associated disease. The specific objectives are:

- Generate community awareness on the causes and consequences of acute malnutrition and encourage treatment uptake, and involve communities in care
- Detect and treat acute malnutrition in children under 5 years of age to reduce mortality and morbidity and sustain their nutritional status after cure
- Detect and treat acute malnutrition in PLW with infants under 6 months of age
- Contribute to the prevention of stunting in young children in the critical 1000-day window

IMAM includes the following components:

- Community outreach for community awareness and involvement, and early detection and referral
- OPD-MAM for the treatment of MAM in children 6–59 months of age and in PLW
- OPD-SAM for the treatment of uncomplicated SAM in children under 5 years of age
- IPD-SAM for the treatment of complicated SAM in children under 5 years of age

Key principles of IMAM:

- Empowering communities by make them aware about the causes and severity of acute malnutrition, why and how to prevent, the need for treatment in case of illness and where to seek care, and how to involve in the care process.
- Active case finding in the community and routine case finding in health facilities improve early access to treatment and coverage and avoid missing opportunities.
- Early detection of illness and referral for treatment ensure that treatment starts before the onset of complications, which simplifies treatment and improves treatment outcome.
- Differential diagnosis ensures that affected children receive the right comprehensive treatment focuses on their health needs and expectations (of the mother or carer) rather than on disease.
- Providing decentralised services closer to the homes of vulnerable populations improves access to care.
- Aiming for good quality of care by adhering to the *Guidelines* and being responsive to the child and mother's needs to retain children in treatment until full recovery, which improves treatment outcome and avoids relapse.
- A referral system traces affected children in the community and across services and in time, which assures continuity of care.
- Opportunities to promote and support optimal infant and young child care and feeding for children and pregnant and lactating women are considered at all times, including support for e.g., early childhood development and psychosocial needs.
- Children and mothers or carers are mostly from vulnerable households and are linked with community initiatives to improve health, nutrition, dietary diversity and social protection to break the cycle of ill health and alleviate poverty.
- Support from technical officers from the Ministry of Public Health may be sought when required or when considering context adaptations.

1.5. Integration of IMAM into the Afghanistan Health System

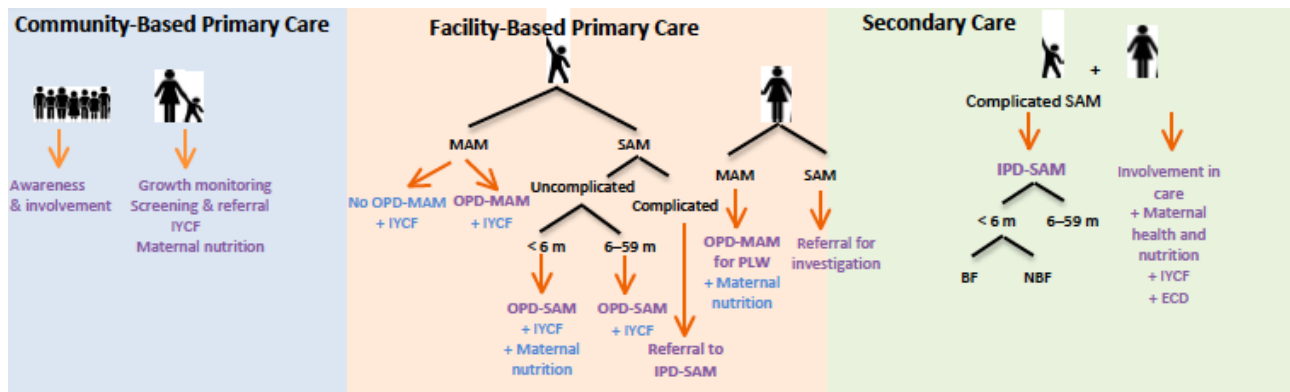


Figure 1.3. Components of the IMAM approach

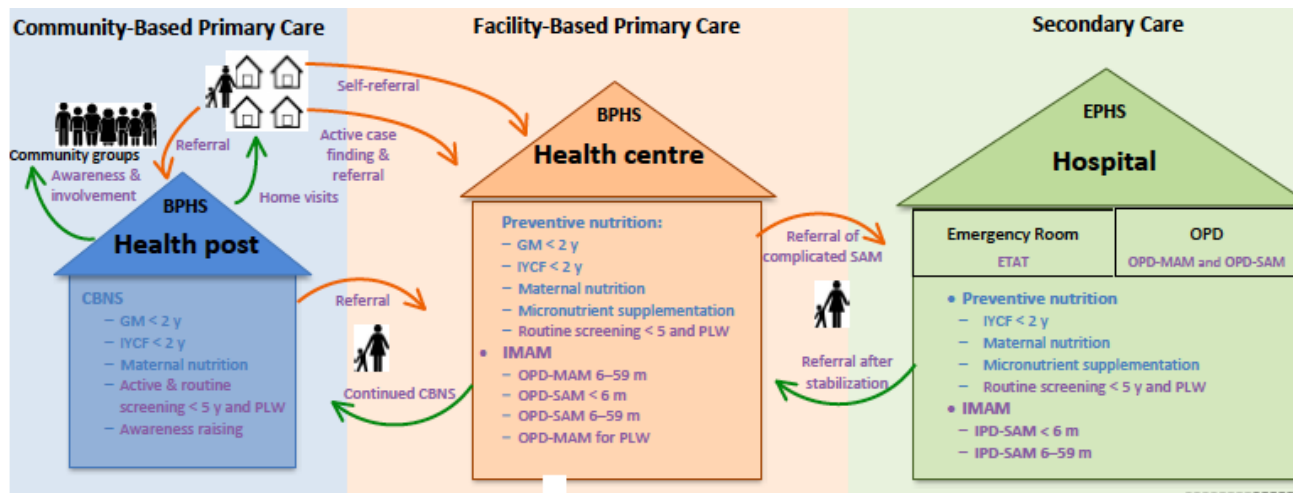


Figure 1.4. Map of IMAM implementation in the health system

BF = breastfeeding, BPHS = Basic Package of Health Services, EPHS = Essential Package of Hospital Services, GM = growth monitoring, ETAT = Emergency Triage, Assessment and Treatment, IYCF = infant and young child feeding, IPD = inpatient department, MAM = moderate acute malnutrition, NBF = non-breastfeeding, OPD = outpatient department, PLW = pregnant and lactating women, SAM = severe acute malnutrition.

MODULE 2. Diagnosing Acute Malnutrition

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- Appendix 3 Measuring Weight
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- Appendix 5 WHZ Look-Up Tables

2.1. Indicators of Acute Malnutrition

Nutritional oedema

Bilateral pitting oedema is a clinical manifestation of SAM caused by an abnormal infiltration and excess accumulation of serous fluid in connective tissue or serous cavity. It is verified when thumb pressure applied on top of both feet for 3 seconds leaves a pit (indentation) in the feet after the thumb is lifted.

Nutritional oedema is **always** an indication of SAM and is always bilateral. Oedema in only one limb may indicate another disease process. Nutritional oedema always begins in the feet and becomes more widespread as severity increases. Severity is graded and determined by spread:

Grade (+)	Bilateral pitting oedema of both feet
Grade (++)	Bilateral oedema of the feet and lower limbs/hands
Grade (+++)	Generalised nutritional oedema of the feet, lower limbs, hands and periorbital area (puffy eyes)

Mid-upper arm circumference

Assessing MUAC involves measuring the left mid-upper arm with a measuring tape. MUAC measures both fat and lean muscle mass of the upper arm. In wasted children, it detects loss of subcutaneous fat and muscle mass [18, 19]. MUAC is influenced by age, sex and body composition of lean mass. Using the same MUAC cutoff in children 6–59 months of age detects younger children, because they have smaller arms than older children, and more girls because they have smaller arms than boys [19]. MUAC is the best indicator of risk of mortality in acutely malnourished children 6–59 months of age.

Weight-for-height z-score (WHZ)

WHZ is a composite index of weight relative to height for children of 2 years or older, or to length for children under 2 years of age. Expressed in z-score, WHZ describes how far and in what direction a child's weight deviates from the median of the weight of a child of the same height (length) and sex in the WHO Child Growth Standards. Assessing WHZ requires good training and regular supervision. It requires first weighing the child using a weight scale and measuring length or height using a height (length) board. Both the scale and height board have to be functional and

calibrated for accuracy. Comparing the weight of a child with the weight of a child of the same height (or length) and sex of the WHO Growth Standard will classify the child as normal nourished or moderately or severely acutely malnourished.

General danger signs and serious associated disease

Medical complications may develop during the progression of acute malnutrition or any childhood illness. The child is assessed for general danger signs according to the IMNCI approach indicate very severe disease requiring urgent referral.

Poor appetite

Anorexia or poor appetite is an indication of a serious pathophysiological response to nutrient depletion from disturbed and dysfunctional liver and metabolic functions. In addition, children with a significant infection also lose appetite, especially in the acute phase of disease. Children with poor appetite are at higher risk of death and need urgent attention in IPD-SAM. Therefore, the appetite of children 6–59 months of age is verified through observation at each contact using RUTF at the start of treatment and during each follow-up visit until recovery.

Weight gain faltering

Weight gain—or growth velocity—is an important indicator of growth in young infants. It can be assessed by comparing absolute weight gain to the median of the WHO Growth Velocity Standards, and more easily by plotting weight on the WAZ child's growth card and as such monitor weight gain. Adequate weight gain means that the infant's weight follows the WAZ lines. Adequate weight gain in breastfed infants is directly related to the adequacy of breastfeeding; therefore, the mother's health and nutrition status is also assessed. During growth monitoring activities that target children under 2 years of age, the weight gain is verified by looking at the monthly weight indications or the line plotted on the WAZ chart. In case the history of weight indication is missing, the mother or carer will be asked whether there has been perceived weight loss or recent failure to gain weight.

Breastfeeding difficulties

The assessment of the mother's breastfeeding capacity and her health and nutrition status is also assessed since her wellbeing directly affects her

infant. It is important to treat the dyad of mother-infant rather than separate individuals. The assessment of the mother's breastfeeding capacity and health will identify problems that need counselling and support. Breastfeeding difficulties are classified on the following criteria:

- **Severe** breastfeeding difficulties if the infant (any of the following):
 - Has structural abnormalities
 - Has abnormality of tone, posture and movement interfering with breastfeeding
 - When held, has arms and legs falling to the side
 - Has a stiff body, is hard to hold or move
 - Has excessive jaw opening or clenching
 - Is not willing or able to suckle on the breast
 - Is coughing and eye tearing while breastfeeding (sign of unsafe swallowing)
- **Moderate** breastfeeding difficulties if the infant (any of the following):
 - Is not well attached
 - Is not suckling effectively
 - Takes less than 8 breastfeeds in 24 hours
 - Receives other foods or drinks
- **Mild/possible** breastfeeding difficulties if the infant has:
 - Breastfeeding difficulties based on the mother's breast conditions, or
 - Non-severe respiratory difficulties that interfere with breastfeeding, e.g., nasal congestions
- **No** breastfeeding difficulties if there are:
 - No signs of inadequate feeding, or
 - No additional issues for mother-infant dyad

2.2. Danger Signs

Medical complications may develop during the progression of acute malnutrition or any childhood illness. The child is assessed for general danger of the IMNCI approach requiring urgent referral

There are three major points in the assessment, classification and treatment of general danger signs in children with acute malnutrition that need attention:

- Clinical signs and symptoms of general danger signs or serious associated disease may be less pronounced and easily missed
- Appetite is being tested
- Treatment protocols of certain general danger signs are different than for healthy children

General danger signs in children (IMNCI)

General danger signs in children 2 months to 5 years of age

Very severe disease:

Anorexia or poor appetite: Inability to drink, breastfeed or eat; failure of the appetite test

Persistent vomiting of all food and fluids

Convulsions

Reduced consciousness or lethargy

Circulatory collapse: Cold hands and feet, weak radial pulse, diminished consciousness

Serious conditions:

Cough or difficult or fast breathing: 2–12 months of age: ≥ 50 breaths/minute
12–59 months of age: ≥ 40 breaths/minute

Chest indrawing, stridor or wheezing

In case of SAM, any form of dehydration: Clinical signs (may be absent) and recent history of fluid loss (diarrhoea or vomiting) or recent sunken eyes

High fever: Raised temperature $> 39^{\circ}\text{C}$ (decide malaria risk, look and feel for stiff neck, runny nose, bacterial cause, measles)

Hypothermia: $< 35.5^{\circ}\text{C}$

Severe palmar pallor

Skin lesions: Extensive skin ulceration requiring antibiotic treatment

Eye signs: Corneal lesions indicative of vitamin A deficiency

In case of SAM: Recent measles (now or before 3 months)

General danger signs in newborns and young infants < 2 months of age

Not feeding well

Convulsions

Drowsy or unconscious

Movement only when stimulated or no movement at all

Fast breathing (60 breaths /minute)

Grunting

Severe chest indrawing

Raised temperature $> 38^{\circ}\text{C}$

Hypothermia $< 35.5^{\circ}\text{C}$

Central cyanosis

Dehydration

2.3. Assessing Appetite

How to test the appetite in children 6–59 months of age

- Do the test in a quiet, separate area to allow the carer and child time to get accustomed to the ready-to-use therapeutic food (RUTF).
- Explain the purpose and procedure of the test to the carer
- Advise the mother or carer:
 1. Wash her hands, wash the child's hands and clean the RUTF sachet
 2. Knead the sachet for a few seconds before opening to ensure a homogenous mixture
 3. Tear open the sachet at the corner
 4. Sit the child on your lap and gently offer the RUTF by squeezing the sachet
 5. Encourage the child to eat the RUTF without force-feeding
 6. Offer the child plenty of clean water to drink from a cup while the child eats the RUTF
- Observe the child for up to 30 minutes and decide the outcome:

Good appetite	Poor appetite
Passing the appetite test:	Failing the appetite test:
Child eats at least 1/3 of a 92 g RUTF sachet or 3 teaspoons within 30 minutes	Child does NOT eat 1/3 of a 92 g RUTF sachet or 3 teaspoons within 30 minutes

2.4. Strategies for Early Detection and Referral

Early identification and referral of acute malnutrition increases the likelihood of a successful treatment outcome and decreases the cost of treatment. Timeliness is in part achieved through multiple screening strategies and in part through an efficient referral system, that links malnourished people between services across time and place:

Active case finding is on-site screening of a target population through face-to-face contact. Active case finding for acute malnutrition is an organised activity that aims to measure all children and PLW on regular intervals (ideally monthly).

Enhanced case finding, or self-referral, is when people seek diagnostic services on their own initiative because they have been sensitised. It works through making populations aware of the symptoms of acute malnutrition and encouraging self-presentation to healthcare services for treatment [12, 13].

Routine case finding is screening people whenever they are in contact with a health service. Routine case finding for acute malnutrition ensures that children under 5 and PLW at any contact of the healthcare service are screened for acute malnutrition. Measuring MUAC and checking for oedema for children 6–59 months of age is quick, accurate and simple for trained people and takes less than 1 minute per child.

Strategies for improved coverage and early start of treatment of acute malnutrition

In the community:

- Actively screening for acute malnutrition through home visits or other health outreach activities.
- Routinely screening for acute malnutrition during health post visits.
- Identifying growth failure and breastfeeding difficulties through monthly growth monitoring.
- Teaching community volunteers and mothers to screen children for acute malnutrition and encourage health seeking.
- Sensitising mothers or carers of children under 5 years of age and pregnant and lactating women on adequate infant and young child feeding and maternal nutrition and malnutrition for improved healthy behaviours.
- Sensitising community groups and individuals on healthy nutrition and behaviours and encouraging involvement in health and nutrition activities through social and individual behaviour change initiatives.

At primary and secondary health facilities:

- Systematically screening children under 5 years of age and pregnant and lactating women for acute malnutrition at any contact with the health sector, including in the emergency room.
- Providing monthly growth monitoring for infants under 2 years of age, including having difficulties on breastfeeding and weight gain evaluated.
- Starting treatment or referring to a higher level of care if no local treatment is available or appropriate.
- Providing individual counselling on infant and young child feeding and maternal nutrition for improved healthy nutrition and behaviours.
- Sensitising mothers or carers of children under 5 years of age and pregnant and lactating women through health and nutrition education and food demonstrations.

2.5. Differential Diagnostic for Start of Treatment in IMAM

IPD-SAM and OPD-SAM for infants < 6 months of age:

IPD-SAM	OPD-SAM	Continued FBNS and CBNS	Continued FBNS and CBNS
Complicated SAM - Bilateral pitting oedema, or - WLZ < -3 with either or - A general danger sign or serious associated disease - Severe breastfeeding difficulties - Recent severe weight loss, prolonged (weeks-months) failure to gain weight or sharp drop across WAZ lines	Uncomplicated SAM - WLZ < -3 with either or - Moderate, mild or possible breastfeeding difficulties - Moderate weight loss or recent (days-weeks) failure to gain weight, or moderate drop across WAZ lines - Alert	MAM WLZ ≥ -3 to < -2 <i>Infants with MAM and satisfactory breastfeeding are referred to FBNS and CBNS that includes monthly growth monitoring, infant and young child feeding, maternal nutrition and screening for acute malnutrition</i>	Normal nutrition - WLZ ≥ -2 - Breastfeeding (or replacement feeding) satisfactory - Weight gain satisfactory (weight curve follows the WAZ line)

IPD-SAM, OPD-SAM and OPD-MAM for children 6–59 months of age:

IPD-SAM	OPD-SAM	OPD-MAM	Continued FBNS and CBNS*
Complicated SAM - Bilateral pitting oedema (+++), or - Bilateral pitting oedema and MUAC < 115 mm or WHZ < -3, or - MUAC < 115 mm or WHZ < -3 with either or - A general danger sign or	Uncomplicated SAM - Bilateral pitting oedema (+) or (++) without MUAC < 115 mm or WHZ < -3, or - MUAC < 115 mm or WHZ < -3 - Appetite preserved - Alert Continue treatment in OPD-SAM	MAM MUAC ≥ 115 mm and < 125 mm or WHZ ≥ -3 and < -2	Normal nutrition MUAC ≥ 125 mm or WHZ ≥ -2

serious associated disease - Poor appetite - Weight < 4 kg (treated in IPD-SAM as infant < 6 months)	after stabilisation in IPD-SAM (Option 1) - Medical complications resolving and oedema reducing (to ++ or +) - Eats at least 75% of the daily amount of the RUTF diet or two full meals of RUTF - Alert		
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OPD-MAM for pregnant and lactating women (PLW) with infant under 6 months of age:

OPD-MAM for PLW	Continued FBNS and CBNS
Acute malnutrition in PLW MUAC < 230 mm <i>PLW with MUAC < 185 mm and/or bilateral pitting oedema are referred to hospital for further investigation</i>	Normal nutrition MUAC ≥ 230 mm

CBNS = community -based nutrition services, FBNS = facility-based nutrition services, IMNCI = Integrated management of neonatal and childhood illness, MAM = Moderate acute malnutrition, MUAC = Mid-upper arm circumference, IPD = inpatient department, OPD = outpatient department, PLW = Pregnant and lactating women, RUTF = Ready-to-use therapeutic food, SAM = Severe acute malnutrition, WAZ =weight-for-age z-score, WHZ (WLZ) = weight-for-height (length) z-score.

Children with MAM and associated illness are treated per the IMNCI protocol, and receive strengthened nutrition support; Infants < 1 month of age are referred to neonatal care; * Use the same anthropometric indicator for start and end of treatment.

MODULE 3. Community Outreach for IMAM

Job Aids:

- 3.1. Community Outreach Activities for IMAM
- 3.2. Monitoring the Quality of Community Outreach
- 3.3. Planning for Community Outreach
- 3.4. Monitoring the Quality of Community Outreach

Forms and registers:

- Form 1. Child Nutrition Tracking Register
- Form 4. Pictorial Nutrition Promotion and Monitoring Card
- Form 5. Child Growth Monitoring Card
- Form 10. Monthly Health Post Pictorial Monitoring Report
- Form 11. Pictorial Monitoring Report for Community Health Supervisors
- Form 16. Community Health Worker Referral Slip
- Form 18. Home Visit Questionnaire

3.1. Community Outreach Activities for IMAM

Objectives:

- Generate awareness and empower communities to involve in care to maximise service access and early start of treatment and compliance to treatment
- Promote good care and feeding practices and healthy behaviours

Methods:

- Sensitisation to empower communities and increase awareness and involvement and address barriers through community discussions
- Community-based screening for active and routine case finding and referral
- Home visits for screening and counselling to follow up of problem cases, such as absentees, non-responders to treatment, and audit defaulting and death
- Linkage with the community-based nutrition programme (CBNP) and other community-based activities for health and nutrition education and growth monitoring, and support from environmental and social protection initiatives

Summary of activities

Preparatory activities:
• Understand (map) community systems and initiatives that are opportunities for generating demand, involving community groups, and screening children and PLW • Understand community perceptions and beliefs regarding malnutrition and local terms used to describe malnutrition • Formulate community sensitisation messages or adapt existing CBNP messages • Agree on a community outreach strategy compatible with CBNP and local context • Ensure MUAC tapes and materials • Ensure a referral system with communication and transportation

• Train CHWs on measuring MUAC, teaching others to measure MUAC, conducting meetings, holding nutrition education and counselling sessions, using job aids, and reporting • Prepare for contingencies
Implement:
• Sensitise community members, groups and networks • Maintain a regular community dialogue • Train active community members (volunteers) and mothers in screening • Conduct active case finding by identified opportunities • Conduct home visits to follow up at risk or problem cases • Involve mothers in care and link with peers, other health facility services and initiatives, relevant community-based initiatives
Monitor:
• Track referrals and defaulters • Record information, monitor and report on quality of activities • Assess provider and user satisfaction • Organise supportive supervision

Criteria for identifying and referring cases of acute malnutrition in the community

Infants < 6 months of age	Children 6–59 months of age	Pregnant and lactating women
• Bilateral pitting oedema • Visible wasting • Loss of appetite • Breastfeeding difficulties • Failure to gain weight	• Bilateral pitting oedema • MUAC < 125 mm • Loss of appetite	• MUAC < 230 mm

3.2. Planning for Community Outreach

Community activities for IMAM target children under 5 years of age and PLW with infants under 6 months of age with acute malnutrition in the community as part of the Community-Based Nutrition Package (CBNP) and aligned with community-based healthcare (CBHC) of the BPHS.

- **Team:** Male and female CHWs are supervised by the CHSs and supported by community volunteers and members of community-based groups and committees. The expanded team for community outreach for IMAM may therefore consist of:
 - Male and female CHWs with their CHSs
 - Mothers of ill children and influential family members (e.g., fathers, grandmothers)
 - Community volunteers
 - Community group members, e.g., from FHA groups and health shuras
 - Influential community members, e.g., teachers, elders, mullahs, private healers, drug vendors

Below is a list of IMAM community outreach activities with responsible persons:

Community outreach activity:	Suggested responsible person:
Community sensitisation and discussion meetings	CHWs and trained community members
Active and routine screening	CHWs and trained community members
Transportation and communication for referral	CHWs and focal point ambulance system
Home visits	CHWs
Health and nutrition education	CHWs
Linking with community-based initiatives	CHWs, CHSs and community groups
Monthly reporting	CHWs and CHSs

- **Infrastructure and space:** Health posts, which are the respective homes of the male and female CHWs, function as meeting spaces. No extra storage space is required. Transportation for home visits and participation in community meetings is conducted by foot.
- **Equipment:** MUAC tape, weighing scales, means of communication, forms and registers.

3.3. Monitoring the Quality of Community Outreach

Monitoring the quality of community outreach is a key component of successful IMAM.

Key Elements of Quality of Community Outreach

- **Capable and motivated CHWs:** CHWs have the competencies, time, tools and equipment to perform activities according to their job description and are supported by CHSs. Satisfaction of CHWs generates motivation and ownership, and promotes sustainability of services.
- **Sensitized and empowered communities:** Community awareness and understanding generate service demand and use and empower communities to adopt healthy practices and behaviours and be involved in care.
- **Active and routine screening:** Early case finding for early start of treatment before the onset of complications is essential to minimize opportunity costs for mother or carers and the health system. Children under 5 years of age should be screened monthly to ensure no opportunities are missed to identify SAM or MAM.
- **Home visits:** CHWs make home visits to trace defaulters and other problem cases to understand reasons for absenteeism, mortality or non-response to treatment.
- **Accurate anthropometric measurement:** Trained measurers calibrate and use appropriate tools for accurate measuring of MUAC and weight (and estimating age).
- **Responsiveness to community needs and expectations:** Satisfaction of service users and community members generates trust, increases service utilisation and strengthens community capacity to claim rights.

Methods

Monitoring the quality of community outreach involves participatory discussions and two-way exchange of information that includes discussions of the quality of activities.

Indicators

Monitoring IMAM community outreach may include collecting information on the following indicators:

- **Number of children under 5 years of age and PLW screened and identified with SAM or MAM:** The register tallies how many children are screened for acute malnutrition in the community and how many cases of SAM and MAM are identified and referred for treatment. The tally may be used for geographic mapping of the severity of cases and vulnerability of population groups. It also may be used to tally the screening of PLW.
- **Number of cases referred for treatment:** CHWs fill out referral slips when they identify children under 5 years of age or PLW with acute malnutrition. The referral slip has two parts. The CHW completes one part and gives it to the mother or carer when a case is identified, and shares the other part with the CHS. When a mother or carer attends the health facility for treatment, the *Referral Slip* is collected by the CHS, who may, during supervisory visits, compare the slips to see which clients attended or did not attend the health facility after referral. The CHW then follows up missed cases.
- **Number of home visits for screening and defaulter tracing:** When a child misses one or two health facility visits, the CHS notifies the CHW to follow up the child during a home visit and encourage return to treatment. Every defaulter should be followed up to identify the reason for defaulting, encourage return to treatment and, in case of death, identify the cause. The CHW uses the *Home Visit Questionnaire* to record why the child stopped attending treatment or died. The CHW shares this information with the CHS, who can collate home visit questionnaires to identify barriers or weaknesses that then will be addressed in health facility meetings, community meetings that discuss quality of services and address barriers to treatment.
- **Number of health and nutrition education sessions and community meetings and topics covered:** This information is monitored as part of the CBNP.

MODULE 4. OPD-MAM and OPD-SAM

Job Aids:

- 4.1. Overview of Activities in OPD-MAM/SAM
- 4.2. Emergency Case Management in OPD-MAM/SAM
- 4.3. Initial Assessment and Diagnosis of Children 6–59 Months of Age in OPD-MAM/SAM
- 4.4. Initial Assessment and Diagnosis of Infants under 6 Months of Age in OPD-SAM
- 4.5. Case management of Children 6–59 Months of Age in OPD-MAM
- 4.6. Case management of Children 6–59 Months of Age in OPD-SAM
- 4.7. Case management of Infants under 6 Months of Age in OPD-SAM
- 4.8. Treatment Protocols in OPD-MAM
- 4.9. Treatment Protocols in OPD-SAM
- 4.10. Treatment Protocols of Associated Illness in OPD-SAM
- 4.11. Drug Dosages in OPD-MAM/SAM
- 4.12. Feeding Protocol of Children 6–59 Months of Age in OPD-MAM/SAM
- 4.13. Monitoring Danger Signs - Action Protocol in OPD-SAM
- 4.14. Involving Mothers in Care
- 4.15. Failure to Respond to Treatment
- 4.16. End of Treatment in OPD-MAM/SAM
- 4.17. Toys
- 4.18. Planning of OPD-SAM/MAM
- 4.19. Monitoring the Quality of Care of OPD-SAM/MAM
- 4.20. Monitoring the Quality of OPD-MAM/SAM Services

Appendices:

- Appendix 6. RUTF look-up table and advice
- Appendix 10. Minimum materials for OPD-MAM/SAM

Forms and registers:

- Form 2. OPD-MAM and OPD-SAM Register
- Form 5. Child Growth Monitoring Card
- Form 6. OPD-MAM/SAM Record
- Form 9. Screening Tally Sheet
- Form 13. OPD-SAM Monthly Reporting Form
- Form 14. OPD-MAM Monthly Reporting Form
- Form 15. BNA Questions Monthly Reporting Form
- Form 17. Health Facility Referral Slip
- Form 19. Prescription Card
- Form 20. Health Facility Supervisory Checklists
- Form 21. Quarterly Nutrition Supply Request Form

4.1. Overview of Activities in OPD-MAM/SAM

All children, upon arrival:

- Verify general danger signs and start emergency treatment, and prepare for referral to hospital if needed
- Screen routinely for acute malnutrition: take anthropometry and check nutritional oedema

Next, children 6–59 months of age:

- Conduct an initial assessment and take history, in case of SAM, test the appetite with RUTF
- Decide treatment plan, and refer in case of complicated SAM to IPD-SAM
- Start treatment:
 - OPD-SAM: give routine antibiotic and any other treatment for infections, and prescribe RUTF
 - OPD-MAM: give anthelmintic and any other treatment for infections, and prescribe RUSF
- Counsel mother or carer, and involve in care:
 - Explain the severity of the child's condition, that the child can be treated in outpatient care as long as she/he can come back each week for follow up to monitor the expected progress of the child until he/she fully recovers and that treatment is likely to take about 2 months (less for oedema cases)
 - Explain how to give the drug(s) and observe giving the first dose
 - Explain how to give the RUTF or RUSF
 - Encourage mother or carer for care and feeding support, including for breastfeeding
 - Verify mother's nutrition and mental health and refer in case needed
- Give appointment for follow-on visit (the same day each week for children with SAM and every 2-weeks for children with MAM) and ensure mother or carer knows to come back to the health facility at anytime if the child's condition deteriorates
- Follow-on visit, check the following, verify danger signs, verify if infections, verify treatment progress, give anthelmintic, and provide weekly ration of RUTF or RUSF

Next, infants < 6 months of age:

- Conduct an initial assessment and take history
 - Assess the child
 - Assess the breastfeeding adequacy of infant and mother
 - Verify wellbeing of mother or carer
- Decide treatment plan in OPD-SAM in case of uncomplicated SAM, refer to IPD-SAM in case of complicated SAM, and to facility-based and community based nutrition services in case of MAM.
- Start treatment: give routine antibiotic and any other treatment for infections
- Provide breastfeeding support, or support mother or carer of the non-breastfeeding infant
- Counsel mother or carer, and involve in care:
 - Explain the severity of the infant's condition
 - Explain how to give the drug(s) and observe giving the first dose
 - Encourage mother or carer for care and feeding support, including for breastfeeding
 - Verify mother's nutrition and mental health and refer in case needed
- Give appointment for follow-on visit and ensure mother or carer knows to come back to the health facility at anytime if the infant's condition deteriorates
- Follow-on visit, verify danger signs and presence of infections, verify treatment progress, verify the vaccination schedule and vaccinate the missing, provide support to the mother or carer

All Children, before the end of treatment:

- Prepare for end of treatment and follow-up in Community-Based Nutrition Programme (CBNP)
- Register the child in the registration book and assign an admission number
- Record all information on the treatment card while doing the consultation
- Link mother or carer with health and nutrition education sessions and facilitate mother-to-mother support

4.2. Emergency Case Management in OPD-MAM/SAM

Children with acute malnutrition and a life-threatening condition will receive emergency care and are stabilised before referral to a site with 24-hour care that is adapted to their condition.

Emergency assessment:

- Look for general danger signs (**general danger signs**):
 - Is the child able to drink or breastfeed?
 - Does the child vomit everything?
 - Has the child had convulsions?
 - Is the child lethargic or unconscious?
 - Is the child convulsing now?
- Determine the child's acute malnutrition status by testing for the presence of bilateral pitting oedema and measuring mid-upper arm circumference (MUAC), because the severity of danger signs and decision for referral to hospital differs in the case of SAM.

Emergency treatment:

In case of any general danger sign, emergency treatment is started and urgent referral to hospital is organised (follow IMNCI emergency treatment and referral):

- Give diazepam if the child is convulsing.
- Give 10% sugar water to prevent low blood sugar (10% sugar water = 10 g or 2 heaped teaspoons in 100 ml water) if available.
- Give any pre-referral treatment immediately, depending on the diagnosis.
- Start presumptive antibiotic treatment.
- In case of high fever, sponge the child with lukewarm water to cool him/her down.

Look and feel for stiff neck, runny nose, bacterial cause and measles.

Do **not** give paracetamol because of liver damage risk at normal dosage.

How to measure fever:

Using a rectal thermometer:

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

Using an axillary thermometer:

- Shake the thermometer down to below 35°C.
 - Place it under the child's armpit.
 - Keep it in place for 3 minutes.
 - If the reading is below 35°C, take a rectal temperature for more accurate reading.
- Encourage continued breastfeeding.
 - Keep the child warm and away from draughts.
 - Complete the assessment of other serious signs that need urgent referral to hospital:
 - Nutritional oedema grade (+++), any nutritional oedema combined with severe wasting, or severe wasting in children weighing less than 4 kg
 - Difficult breathing: Chest in-drawing, stridor or wheezing
 - Fast breathing: 2–12 months of age: ≥ 50 breaths/minute
12–59 months of age: ≥ 40 breaths/minute
 - Severe dehydration: Clinical signs AND recent history of fluid loss (diarrhoea or vomiting) or recent sunken eyes
 - Hypothermia: Fever less than 35.5° C
 - Severe anaemia: Severe palmar pallor
 - Skin lesions: Extensive skin ulceration requiring antibiotic treatment
 - Eye signs: Corneal lesions indicative of vitamin A deficiency
 - Recent measles (now or in past 3 months)
 - TB contact

4.3. Initial Assessment and Diagnosis of Children 6–59 Months of Age in OPD-MAM/SAM

Assess:

- Ask for demographic information on the child, the family's living conditions, any deaths of siblings, the child's birth weight, breastfeeding and other feeding history, recent illness.
- Indicate whether the child is a new admission, a re-admission (returned defaulter within 3 months of absenteeism) or referred from IPD-SAM to continue treatment.
- Check the following signs:
 - Presence of bilateral pitting oedema grade (+) (++) or (+++)
 - MUAC reading
 - Weight
 - Height (or length) and WHZ only if capacity exists (use the Moyo chart to identify WHZ)
 - Number of stools per day and appearance of stool
 - Presence and appearance of vomit
 - Passing urine
 - Cough
 - Feeding history
 - Respiratory rate
 - Chest indrawing
 - Pallor
 - Temperature
 - Signs of dehydration (and recent sinking of eyes)
 - Mouth infection
 - Eye infection
 - Ear infection
 - Lymph nodes
 - Disability
 - Skin changes, infection or scabies
 - Immunization history
 - Contact with measles or tuberculosis
- Test appetite with RUTF in case of SAM for all children that are alert.

- Decide whether to do a rapid diagnostic test of malaria and urine.

Diagnose and decide:

- Decide whether the child 6–59 months of age has MAM or complicated or uncomplicated SAM and needs treatment in OPD-SAM or OPD-MAM or referral to IPD-SAM.

Diagnosis and treatment plan for children 6–59 months of age:

Diagnosis		
MAM	Uncomplicated SAM	Complicated SAM
• MUAC $\geq$ 115 and $<$ 125 mm	• Bilateral pitting oedema grade (+) or (++) without MUAC $<$ 115 mm or WHZ $<$ -3, or • MUAC $<$ 115 mm or WHZ $<$ -3 • Appetite • Alert	• Bilateral pitting oedema grade (+++), or • Bilateral pitting oedema and MUAC $<$ 115 mm or WHZ $<$ -3, or • MUAC $<$ 115 mm or WHZ $<$ -3 with: – General danger sign or serious associated disease, or – Poor appetite, or – Weight $<$ 4 kg
Treatment plan		
Start treatment in OPD-MAM.	Start treatment in OPD-SAM.	Refer to IPD-SAM.

4.4. Initial Assessment and Diagnosis of Infants under 6 Months of Age in OPD-SAM

Assess:

INFANT

- Check for **general danger signs**, following the same guidance as for children 6–59 months of age:
 - Inability to drink or breastfeed
 - Vomiting everything
 - Lethargy or unconsciousness
 - Convulsions (past or present)
- Ask, look, listen, and feel for main **symptoms of severe illness**:
 - Cough or difficult breathing with chest indrawing or stridor in calm child
 - Diarrhoea and sign of dehydration (recent sunken eyes)
 - High fever or stiff neck
 - Measles now or in the past 3 months, clouding cornea or other eye signs of vitamin A deficiency or deep/extensive mouth ulcers
 - Ear pain with tender swelling behind the ear
 - Severe palmar pallor
 - TB contact

→ *An infant with danger signs or symptoms of severe disease needs immediate life-saving interventions. Complete the assessment and give pre-referral treatment immediately.*

- Verify nutritional status:
 - Ask about appetite.
 - Check for the presence of bilateral pitting oedema.
 - Measure weight and length and classify WHZ using the Moyo chart.
 - Plot the weight on the child growth chart and look at the position and any drop across WAZ lines; Ask about recent weight loss or failure to gain weight.
WLZ is not available for infants < 45 cm long; WAZ is used instead to classify SAM.
- Do an in-depth assessment following the same guidance as for children 6–59 months of age:

- Conduct a full assessment with the support of the *OPD-SAM Record* and the IMNCL algorithm and identify other medical conditions that need treatment.
- Do laboratory tests and ask for other investigations as indicated by the assessment.
- Do a breastfeeding assessment of the infant, asking the mother questions (without judging her choice of feeding method) and observing a breastfeeding session.
Ask, listen, observe:
 - What is the breastfeeding history? How often is the infant breastfed? Any problems or concerns?
 - Has the infant received any other feeds? Water, liquid or milk? When did this start? Solid foods? When did this start?
 - Observe breastfeeding, and assess non-breastfeeding based on conversation
- Identify, analyse:
 - Structural abnormalities through physical examination
 - Muscular abnormalities
 - Breastfeeding assessment based on observation

MOTHER

- Verify nutritional status:
 - Check for the presence of bilateral pitting oedema and measure MUAC.
- Investigate whether there is a medical problem that needs attention and referral.
- Investigate general wellbeing and identify any mental health problem that needs action according to mental health guidance, including care and social support.

Breastfeeding assessment outcome

Breastfeeding difficulties, if ANY indication of the need for support on:

- Re-lactating
- Expressing breast milk and cup-feeding
- Breast conditions, e.g., engorgement; sore and cracked nipples; plugged ducts and mastitis; flat, inverted, large or long nipples; nipple pain; thrush
- Perception of not having enough breast milk

- Other concerns, e.g., lack of confidence, concerns about diet, working away from home

No breastfeeding, if ANY indication of the need for support on:

- Re-lactating
- Meeting the nutritional needs of the infant
- Working away from home
- Delegating infant feeding and care to another

Decide:

INFANT

- **Refer to facility-based nutrition services and community-based nutrition services if:**
 - Normal nutritional status or WLZ ≥ -2 or ≤ -3 , and
 - No oedema
 - No breastfeeding difficulties
 - No weight loss or failure to gain weight, no drop across WAZ lines
 - Infant alert and well
 - Adequate social circumstances and breastfeeding and IYCF support availability
- **Start treatment in OPD-SAM if:**
 - The infant has WLZ < -3 with:
 - Moderate, mild or possible breastfeeding difficulties, or
 - Moderate weight loss or recent (days-weeks) failure to gain weight, or moderate drop across WAZ lines
 - The infant is alert.
 - Social circumstances are adequate, and breastfeeding and IYCF support are available.
- **Refer to IPD-SAM if:**
 - The infant has bilateral pitting oedema, or
 - WLZ < -3 with
 - A general danger sign or serious associated disease, or
 - Severe breastfeeding difficulties, or
 - Recent severe weight loss or prolonged (weeks-months) failure to gain weight, or sharp drop across WAZ lines
 - Social circumstances are inadequate and breastfeeding or IYCF support is available.

MOTHER

- Admit to OPD-MAM if MUAC < 230 mm.
- Refer to hospital if bilateral pitting oedema or MUAC < 185 mm or any danger sign.
- Refer to mental health counselling if needed.
- Refer to community-based health and nutrition support.

Diagnosis and treatment plan for infants < 6 months with acute malnutrition:

Diagnosis			
Normal nutritional status	MAM	Uncomplicated SAM	Complicated SAM
- WLZ ≥ -2 - No breastfeeding difficulties - Weight gain - Alert and well	- WLZ ≥ -3 to < -2 - No breastfeeding difficulties - Weight gain - Alert and well	- WLZ < -3 with - Moderate, mild or possible breastfeeding difficulties, or - Moderate weight loss or recent (days-weeks) failure to gain weight, or moderate drop across WAZ lines - Alert	- Bilateral pitting oedema, or - WLZ < -3 with - A general danger sign or serious associated disease, or - Severe breastfeeding difficulties, or - Recent severe weight loss or prolonged (weeks-months) failure to gain weight, or sharp drop across WAZ lines
Treatment plan			
Continued FBNS and CBNS	Continued FBNS and CBNS	OPD-SAM	IPD-SAM
CBNS = Community-based nutrition services, FBNS = Facility-based nutrition services. <i>In case of inadequate social circumstances and breastfeeding support, refer to a higher level where it is available.</i>			

4.5. Case Management of Children 6–59 Months in OPD-MAM

Treat:

- Treat for presumptive helminthiasis on admission:
Single dose mebendazole 250 mg for children 12–23 months of age and 500 mg for children ≥ 2 years of age, or albendazole 200 mg for children 12–23 months of age and 400 mg for children ≥ 2 years.
- Treat for associated medical conditions according to IMNCI and decide whether general danger signs or complications need a medical referral.
- Give a take-home amount of ready-to-use supplementary food (RUSF) providing 500 Kcal/child/day as a supplement to the home foods to recover lost weight: The Child should eat 1 sachet of RUSF per day taken as a supplement to home foods and continue breastfeeding if they are breastfed.

The amount of RUSF the mother or carer receives to take home should be sufficient to cover the period until the next follow-up visit, i.e., 14 sachets of RUSF for bi-weekly follow-up visits.

If no RUSF is available, give mothers or carers ‘intensified’ health and nutrition counselling and guidance on IYCF with special attention to improved complementary feeding.

- Advise the mother or carer on the treatment, RUSF use as a supplement to the complementary food, and continue breastfeeding.
- Counsel the mother or carer on health and nutrition, and advise to attend nutrition services in the health facility and the community.
- Counsel the mother or carer on sensory stimulation and emotional support of the child.
- Advise the mother or carer to attend the nutrition services in the health facility and the community.
- Verify the mother or carer’s health and nutrition status, and refer for psychosocial support if needed.

- Verify the immunization schedule and vaccinate the child if needed.
- Make an appointment for a follow-up visit every other week (bi-weekly).
- Register the child and give a unique registration number (if not given before).
- Record all information from the consultation on the *OPD-MAM Record*.
- Fill out the *Prescription Card* that is kept by the mother or carer.

Monitor:

- Check the child's condition and treatment progress at each follow-up visit (usually bi-weekly):
 - Weight gain
 - MUAC (WHZ) increase
 - Appetite maintained
 - Temperature normal
 - Respiratory rate normal
 - Absence of health problem or medical condition according to IMCNI
- Determine whether a general **danger sign** or complication needs immediate attention and referral.
- Determine whether the child has reached the end of treatment criteria.
- Decide whether the child **fails to respond to treatment**. The child should gain weight, and MUAC should increase accordingly. The child's general clinical condition should also improve. If not, decide on a home visit to support the feeding and care environment and/or refer for further medical investigation.
- Give take-home RUSF until the next follow-up visit; fill out the *Prescription Card*.
- Register attendance and record all information taken during the consultation on the OPD-MAM Record.
- Monitor **bi-weekly attendance**: Check whether the child attends OPD-MAM. If not, decide on a home visit to find out the reason for absenteeism or defaulting.

4.6. Case Management of Children 6–59 Months of Age in OPD-SAM

Treat:

- Prevent deterioration of the child's condition:
 - Give 10% sugar water if available (10 gr or 2 heaped teaspoons in 10 ml water).
 - Encourage continued breastfeeding if breastfed and start feeding.
 - Cover the child and keep him/her warm and away from draught.
- Treat for presumptive infections with broad spectrum antibiotics: Amoxicillin 40 mg/kg orally two times per day for 5 days, or if amoxicillin is not available, Cotrimoxazole (trimethoprim 4 mg/kg + sulfamethoxazole 20 mg/kg) two times per day for 5 days
- After one week in treatment as presumptive treatment, give a single dose of anthelmintic orally:
Mebendazole 250 mg for children 12–23 months of age and 500 mg for children ≥ 2 years of age, or
Albendazole 200 mg for children 12–23 months of age and 400 mg for children ≥ 2 years of age.
- Treat or prevent associated medical conditions:
 - Measles: Give measles vaccination on admission.
 - In case of eye signs of vitamin A deficiency, refer the child to IPD-SAM; do not give vitamin A in the absence of eye signs and if the child receives RUTF with WHO specifications.
 - Malaria: Treat according to the national protocol.
 - Mild anaemia: Do not give iron when the child receives RUTF with WHO specifications.
 - Diarrhoea: Continue feeding and giving fluids; do not give ORS or zinc if the child receives RUTF with WHO specifications.
 - In case of bloody, persistent or profuse watery diarrhoea, which is a medical complication, refer the child to IPD-SAM.
 - Minor skin infections: Treat according to the national IMNCI guidelines.
 - Minor eye infections: Treat according to the national IMNCI

- guidelines.
- TB contact: Treat according to the national guidelines.
- Suspected HIV: Test and treat according to the national guidelines.
- Fever: Cool the child by sponging the child's body with lukewarm water.
- In case of high fever (body temperature $\geq 39.5^{\circ}\text{C}$) or persistent fever, refer the child to the hospital; do not use paracetamol because of the risk of hepatic damage.
- Give take-home amount of RUTF providing 200 Kcal/kg/day for therapeutic feeding to restore metabolism and recover lost weight (catch-up growth).
- Counsel the mother or carer on feeding and care practices and the use of RUTF at home
- Make an appointment for a follow-up visit every week.
- Register the child and give a unique registration number (if not given before).
- Record all information from the consultation on the *OPD-SAM Record*.
- Fill out the *Prescription Card* that is kept by the mother or carer.

Monitor:

- Check the child's condition and treatment progress at each follow-up visit (usually weekly):
 - Oedema loss
 - Weight gain
 - MUAC (WHZ) increase
 - Appetite maintained
 - Temperature normal
 - Respiratory rate normal
 - Absence of health problem or medical condition according to IMCNI
- Determine if a general **danger sign** or complication needs immediate attention and referral.
- Determine whether the child has reached the end of treatment criteria.
- Decide whether the child **fails to respond to treatment**.
- Advise the mother or carer to gradually introduce complementary foods after the child has eaten the daily RUTF dose.

- Counsel the mother or carer on health and nutrition, and advise to attend nutrition services in the health facility and the community.
- Verify the mother or carer's health and nutrition status, and refer for psychosocial support.
- Counsel the mother or carer on sensory stimulation and emotional support of the child.
- Verify the immunization schedule and vaccinate the child if needed.
- Give the take-home amount of RUTF until the next follow-up visit and fill the *Prescription Card*.
- Register attendance and record all information from the consultation on the *OPD-SAM Record*.
- Monitor **weekly attendance**: Check whether the child attends OPD-SAM. If not, decide on a home visit to find out the reason for absenteeism or defaulting.

4.7. Case Management of Infants Under 6 Months of Age in OPD-SAM

Treat:

- Advise to keep the infant warm. Cover the head and body to prevent hypothermia.
- Give routine, preventive treatment and other specific treatment based on diagnosis:
Amoxicillin 40 mg/kg two times per day for 5 days
Drug regimens for infants with weighing ≥ 3 kg are similar to those for children ≥ 6 months of age. Do not give vitamin A, folic acid, anthelmintic or measles vaccination.
- Counsel and support the mother or carer on appropriate care and feeding practices.
- Encourage continued breastfeeding; provide counselling breastfeeding support:
If the mother is available and breastfeeding is insufficient, counsel and support the mother to re-lactate (plan A). If the mother is not available, consider options for wet-nursing or accessing safe expressed breast milk (plan B). If there is no realistic prospect of the infant being breastfed, consider appropriate replacement feeding with commercial infant formula (plan C) and provide support for safe preparation and use at home. Early introduction of complementary foods for older infants could be considered, depending on maturity of swallowing.
- In malarial areas, encourage sleeping under impregnated bednets.
- Monitor the infant's weight gain weekly and plot WAZ on the *Child Growth Monitoring Card*.
- Verify the mother or carer's health and nutrition status, and refer for psychosocial support if needed.
- Counsel the mother or carer on health and nutrition, advise to attend nutrition services in the health facility and community, and ask to return to the health facility in case of a deterioration of the infants' condition.
- Counsel the mother or carer on sensory stimulation and emotional support of the child.
- Refer the infant and mother or carer to IPD-SAM if the infant develops general danger signs or symptoms of serious disease,

does not gain weight or loses weight while the mother or carer is receiving counselling and support for breastfeeding or replacement feeding.

Monitor:

- Identify danger signs and non-response to treatment:
- Monitor weight and weight gain: Plot the infant's weight is plotted on the WAZ growth chart and evaluate the growth curve. Serial measurements showing flattening of the curve or unexpected crossing of two or more percentile lines downward is considered failure to thrive or growth failure, indicating ineffective lactation.
- Involve mothers in care:
 - Counsel mothers or carers on appropriate breastfeeding and growth.
 - Guide mothers or carers to provide sensory stimulation and emotional support for the infants.
 - Provide health and nutrition education for improved feeding and care practices.
 - Provide psychosocial support to mothers or carers.
 - Provide health and nutrition support according to their health and nutritional status.

Prepare for end of treatment:

Specialised care for the infant under 6 months of age ends when the infant:

- Breastfeeds effectively or feeds well with replacement feeding
- Gains adequate weight and follows the WAZ growth curve (serial weight measurements follow consistently on or between the same percentiles)
- Has WLZ at least ≥ -2
- Has completed age-specific immunisation schedules
- Has a mother or carer who has no ongoing health or psychological condition requiring intensive treatment

4.8. Treatment Protocols in OPD-MAM

Name	When to Give	Age/Weight	Prescription and dosage
ALBENDAZOLE (or) MEBENDAZOLE	On admission in OPD-MAM for the presumptive treatment of worms	≥ 12 months	1–2 years: Albendazole 200 mg single dose Mebendazole 250 mg single dose > 2 years: Albendazole 400 mg single dose Mebendazole 500 mg single dose
MEASLES VACCINE	Give measles vaccine if child > 9 months and has not yet received the measles vaccine. If the child is < 9 months of age at discharge, make an appointment to receive a repeat vaccination after 1 year of age.	> 9 months	Refer to national EPI guidelines
OTHER VACCINES	Update all vaccinations according to the national immunization schedule.	All ages	Refer to national EPI guidelines See child's vaccination card
RUSF	If appetite, on admission OPD-MAM for the recovery of the metabolism	6–59 months	500 Kcal/child per day, or 1 sachet of 92 g

Other preventive actions:

General: Advice to keep the child warm: cover the child, apply kangaroo technique if needed, put hat. Use impregnated bednets in malaria endemic areas.

Vitamin A: Vitamin A is not given as the daily dose of RUTF contains sufficient Vitamin A (daily dose provides minimum 5,000 IU of vitamin A, and up to a double preventive vitamin A dose for a completed RUTF treatment). If the child had recent measles (now or in past 3 months), the child is referred to IPD-SAM.

Folic Acid and Iron: The child on a RUSF diet receives neither folic acid nor iron. The daily dose of RUSF contains sufficient folic acid (210 µg/100 g or 500 Kcal) and iron (10 mg/100 g or 500 Kcal).

Zinc: Zinc is not given in case of diarrhoea, as the daily dose of RUTF contains sufficient zinc (daily dose provides 30–45 mg of elemental zinc)

4.9. Treatment Protocols in OPD-SAM

Name	When to Give	Age/Weight	Dosage
Sugar water (10% sucrose)	On admission OPD-SAM for the prevention of hypoglycaemia	All ages	50 ml once orally Sugar water is obtained by solving 1 teaspoon of sugar in 3 table spoons of water
AMOXICILLIN (or)	On admission OPD-SAM for the presumptive treatment of infections	0–59 months	Amoxicillin 40 mg/kg orally two times per day for 5 days
COTRIMOXAZOLLE			Cotrimoxazole (trimethoprim 4 mg/kg + sulfamethoxazole 20 mg/kg) orally two times per day for 7 days
ALBENDAZOLE (or) MEBENDAZOLE	After 1 week OPD-SAM for the presumptive treatment of worms	≥ 12 months	Albendazole: 1–2 years: 200 mg single dose > 2 years: 400 mg single dose Mebendazole: 1–2 years: 250 mg single dose > 2 years: 500 mg single dose
MEASLES VACCINE	Give measles vaccine if child > 9 months and has not yet received the measles vaccine. If the child is < 9 months at discharge, make an appointment to receive a repeat vaccination after 1 year of age.	> 9 months	Refer to national EPI guidelines
OTHER VACCINES	Update all vaccinations according to the national	All ages	Refer to national EPI guidelines and the child's vaccination card

	immunization schedule.		
RUTF	If appetite, on admission OPD-SAM for the recovery of the metabolism	6–59 months	200 Kcal/kg per day, see look-up table (1 sachet of 92 g = 500 Kcal)

Other preventive actions:

General: Advice to keep the child warm: cover the child, apply kangaroo technique if needed, put hat. Use impregnated bednets in malaria endemic areas.

Vitamin A: Vitamin A is not given as the daily dose of RUTF contains sufficient Vitamin A (daily dose provides minimum 5,000 IU of vitamin A, and up to a double preventive vitamin A dose for a completed RUTF treatment). If the child had recent measles (now or in past 3 months), the child is referred to IPD-SAM.

Folic Acid and Iron: The child on a RUTF diet receives neither folic acid nor iron. The daily dose of RUTF contains sufficient folic acid (210 µg/100 g or 500 Kcal) and iron (10 mg/100 g or 500 Kcal).

Zinc: Zinc is not given in case of diarrhoea, as the daily dose of RUTF contains sufficient zinc (daily dose provides 30–45 mg of elemental zinc)

4.10. Treatment Protocols of Associated Illness in OPD-MAM/SAM

Name of Medication	When to Give	Prescription and Dosage	Special Instructions
SECOND-LINE ANTIBIOTIC	For SAM without medical complications after first-line antibiotic	Refer to the national antibiotic treatment protocols	Use as second-line antibiotic to treat confirmed minor infections, in the absence of IMCI danger signs (referral to hospital).
ANTI-MALARIAL	Refer to the national guidelines for first-line treatment and whether presumptive malaria treatment is given, and criteria for referral to hospital.	Refer to the national guidelines	For treatment of malaria in case of SAM, do not use Quinine. Note: Iron and folic acid should never be provided together with a malaria treatment; malaria is treated first.
ANTI-RETROVIRAL THERAPY (ART) and COTRIMOXAZOLE	For treatment of HIV infection, start (or continue) ART and cotrimoxazole in addition to the antibiotic treatment for SAM. See national guidelines.	Refer to the national guidelines	
ANTI-TB and PYRIDOXINE SUPPLEMENTATION	For treatment of tuberculosis with isoniazid treatment, give pyridoxine supplement.	Refer to the national guidelines Pyridoxine supplementation 5–10 mg single daily dose	
TETRACYCLINE EYE OINTMENT (or) CHLORAMPHENICOL	For treatment of eye infection	1 drop two times per day 1 drop four times per day	Wash hands before and after use; wash eyes before application; continue for 2 days after

EYE DROPS			disappearance of signs of infection.
NYSTATIN	For treatment of candidiasis	100,000 units (1 ml) Four times per day after food for 7 days	Use dropper and show caregiver how to use it.
BENZYL BENZOATE	For topical treatment of scabies	Apply over whole body; repeat without bathing on following day; wash off 24 hours later	Avoid eye contact; do not use on broken or secondary infected skin.
WHITFIELDS	For topical treatment of ringworm, taenia or fungal infections of the skin	Apply two times per day	Continue treatment until condition has completely resolved.
GENTIAN VIOLET	For topical treatment of minor abrasions or fungal infections of the skin	Apply on lesion once a day	Can be repeated; continue until condition has resolved.

***NOT LISTED: MEDICINE PROTOCOLS FOR TREATING OTHER INFECTIONS AND INFESTATIONS; REFER TO THE NATIONAL TREATMENT PROTOCOLS.**

4.11. Drug Dosages in OPD-MAM/SAM

Dosage of routine antibiotic for children 6–59 months of age with uncomplicated SAM:

Drug* and dosage	Single dose according to body weight			
	3–< 6 kg	6–< 10 kg	10–< 15 kg	15–< 20 kg
Amoxicillin 40 mg/kg two times per day for 5 days				
Tablet 250 mg	1	1 ^{1/2}	2	3
Syrup 250 mg/5 ml	2.5 ml	7.5 ml	10 ml	-
Cotrimoxazole (trimethoprim 4 mg/kg + sulfamethoxazole 20 mg/kg) two times per day for 5 days				
Adult tablet (80 mg T + 400 mg S)	1/4	1/2	1	1
Paediatric tablet (20 mg T + 100 mg S)	1	2	3	3
Suspension (40 mg T + 200 mg S /5 ml)	2 ml	3.5 ml	6 ml	8.5 ml

* Use either amoxicillin or cotrimoxazole.

Dosage of routine anthelmintic for children 12–59 months of age:

Drug*	Age	Single dose	Prescription
Mebendazole	12–23 months	250 mg	Single dose after 1 week for SAM and upon admission for MAM
	24 months and older	500 mg	
Albendazole	12–23 months	200 mg	MAM
	24 months and older	400 mg	

* Use either mebendazole or albendazole.

4.12. Feeding Protocol of Children 6–59 Months in OPD-MAM/SAM

RUSF supplement in OPD-MAM

Dosage of RUSF (92g) for children 6–59 months of age with MAM:		
Weight of the child (kg)	Sachets per day	Sachets per week
/	1	7

Key messages:

1. Do not share RUSF. RUSF is a food and medicine for thin children only.
2. Wash the child's hands and face with soap before feeding if possible. Clean the RUSF package.
3. Give small, regular meals of RUSF. Your child should have 1 sachet per day.
4. Continue to breastfeed regularly (if applicable). Offer breast milk first before every RUSF feed.
5. Offer the child plenty of clean water to drink while he/she is eating RUSF.
6. Encourage the child to eat homemade foods (5–6 meals per day) .
7. Keep food clean and covered.
8. Keep the child covered and warm.
9. Do not stop feeding when a child has diarrhoea.
10. Return to the health facility whenever the child's condition deteriorates or if the child is not eating sufficiently.

RUTF diet in OPD-SAM:

Dosage of RUTF (92g) for children 6–59 months of age with uncomplicated SAM:

Weight of the child (kg)	Sachets per day	Sachets per week
4.0–4.9	2	14
5.0–6.9	2.5	18
7.0–8.4	3	21
8.5–9.4	3.5	25
9.5–10.4	4	28
10.5–11.9	4.5	32
> 12	5	35

Key messages:

1. Continue to breastfeed the child on demand until the child reaches at least 2 years. Breast milk is the best food but has to be complemented with other nutritious food from 6 months of age onward.
2. Give the prescribed drugs as indicated.
3. Wash the child's hands and face and clean the RUTF sachet with soap before feeding.
4. Give the daily-prescribed dose of RUTF to the child with sips of drinking water after each mouthful. The first week, the child should not eat anything else; from the second week, complementary food may gradually be offered after taking the prescribed dose of RUTF.
5. Do not mix RUTF with water or other fluids.
6. Keep the RUTF sachet clean and covered.
7. Do not share the RUTF with members of the family; RUTF is a treatment for the malnourished child.
8. Continue to feed the RUTF even if the child has diarrhoea. During illness, give more food and fluids.
9. Keep the child covered and warm. Malnourished children get cold quickly.
10. Return to the health facility whenever the child's condition deteriorates or the child is not eating well.
11. Return to the health facility after 1 week to monitor the condition of the child and to receive RUTF.

4.13. Monitoring Danger Signs – Action Protocol in OPD-SAM

Sign	Referral to IPD-SAM	Home Visit
GENERAL CONDITION	Deteriorating	Child is absent or defaulting
BILATERAL PITTING OEDEMA	Grade +++	
	Any grade of bilateral pitting oedema with severe wasting (marasmic kwashiorkor)	
	Increasing bilateral pitting oedema	
	Not reducing bilateral pitting oedema by week 3	Child is not gaining weight or losing weight on follow-up visit
ANOREXIA *	Poor appetite or unable to eat: Failed appetite test	
VOMITING *	Intractable vomiting	
CONVULSIONS *	In case of convulsions since the previous visit	
LETHARGY, NOT ALERT *	Child is difficult to awake	Child is not losing oedema
UNCONSCIOUSNESS *	Child does not respond to painful stimuli	
HYPOGLYCAEMIA	A clinical sign in a child with SAM is eye-lid retraction: child sleeps with eyes slightly open. Low level of <u>blood glucose</u> < 3 mmol/l, < 54 mg/dl	Child has returned from IPD-SAM or refused referral to IPD-SAM
DEHYDRATION	Severe dehydration based primarily on recent history of diarrhoea, vomiting, fever or sweating and on recent appearance of clinical signs of dehydration as reported by the mother/caregiver	
HIGH FEVER	Axillary temperature $\geq 38.5^{\circ}\text{C}$, rectal temperature $\geq 39^{\circ}\text{C}$ taking into consideration the ambient temperature	

HYPOTHERMIA	Axillary temperature < 35° C, rectal temperature < 35.5° C taking into consideration the ambient temperature	
RESPIRATION RATE	≥ 60 respirations/minute for children under 2 months	
	≥ 50 respirations/minute from 2-12 months	
	≥ 40 respirations/minute from 1–5 years	
	≥ 30 respirations/minute for children over 5 years	
	Any chest in-drawing	
ANAEMIA	Palmer pallor or unusual paleness of skin	
SKIN LESION	Broken skin, fissures, flaking of skin	
SUPERFICIAL INFECTION	Any infection requiring intramuscular antibiotic treatment	
WEIGHT CHANGES	Below admission weight on week 3	
	Weight loss for three consecutive visits	
	Static weight for three consecutive visits	
REQUEST	Mother/caregiver requests treatment of child in inpatient care for social reasons (decided by supervisor)	
NOT RESPONDING	Child that is not responding to treatment is referred to inpatient care or hospital for further medical investigation.	

** Integrated Management of Neonatal and Childhood Illness (IMNCI) general danger signs*

4.14. Involving Mothers in Care

Principles on involving mothers in care:

Mothers or carers are encouraged to involve in the care of their children during treatment and recovery of acute malnutrition.

Mothers or carers involve in supporting their children's recovery in the following ways:

- Participating in the treatment of their children will help mothers or carers understand the child's condition, support progress and take responsibility for care.
- Receiving individual counselling during the health facility visits and in the community at the health post or through home visits will help mothers or carers believe in their ability to feed and care for their children effectively according to their children's age.
- Providing sensory stimulation and physical and emotional support for their children will address the physical, social, emotional, and intellectual developmental needs of the child. Integrating simple early stimulation, learning and play activities with nutrition support is important to increase and sustain the impact of treatment on a young child's health and nutritional status.
- Enhancing maternal knowledge and practice of early childhood development activities, mother and child groups strengthen connections among women and raise awareness of the risks of malnutrition, overweight and undernutrition.

Mothers and carers have opportunities to improve their own health and wellbeing when attending services for their ill children by:

- Receiving health and nutritional support as needed.
- Receiving psychosocial support as needed [13]. E.g., mental health interventions are part of the Basic Package of Health Services (BPHS) and psychosocial counsellors are present in comprehensive health centres and hospitals.
- Caring for their ill children enhances maternal wellbeing.
- Participating in health and nutrition education sessions reinforces the same messages on improving feeding and care practices and provides

and opportunity to discuss with other mothers and create mother-to-mother support.

- Linking with community initiatives and accessing social protection or safety nets help strengthen their coping ability and confidence.

Key messages for health and nutrition education:

- Ensure healthy maternal nutrition.
- Start breastfeeding at the first hour after delivery.
- Ensure exclusive breastfeeding until 6 months of age.
- Give healthy complementary feeding starting at age 6 months up to 35 months and continue breastfeeding.
- Continue good feeding during and after illness.
- Wash hands before handling food and after using the toilet.
- Store food in a clean way.
- Boil water before consumption.
- Use zinc with ORS when diarrhoea.
- Access biannual vitamin A supplementation and deworming.
- Access iodized salt and fortified blended foods.
- Use latrines and safely dispose of waste.

Guidance on sensory stimulation and emotional support of the child:

- **Ensure the presence and involvement of mothers or carers during treatment in OPD-SAM or IPD-SAM.** Encourage mothers or carers to feed, hold, comfort and play with children as much as possible. IPD-SAM wards should have adult beds for mothers or carers to sleep with their children. However, as few other adults as possible should interact with the children. Adults should talk to, smile at and show affection to the children. Medical procedures such as venepuncture should be done by the most skilled person available preferably out of earshot and sight of the other children. Immediately after any unpleasant procedure, children should be held and comforted.
- **Make the play environment as stimulating as possible.** Rooms or wards have bright colours, decorations and colourful mobiles that interest children. Brightly coloured aprons more informal clothing are encouraged. A radio can provide background music. The atmosphere in the ward should be relaxed, cheerful and welcoming. Toys should be available in the children's beds and rooms, as well as in play areas, and should be safe, washable and appropriate for the children's age and level of development. In low-resource settings, health workers that engage with mothers or carers can be trained in activities appropriate for each stage of development. Children need familiar objects and scenarios with toys and play scenes appropriate for their developmental age to learn.
- **Provide one-on-one counselling of mothers or carers.** Health providers should provide mothers or carers with precise messages on feeding and care practices. For example, messages on the importance of breastfeeding should include how breastfeeding provides an opportunity to show warmth and love and communicate through singing, touch and facial expression. The messages should indicate that care provided in this way is as vital as the breast milk.
- **Deliver health and nutrition messages to mothers or carers in an interactive way.** Health messages to promote good hygiene, proper nutrition, infant stimulation and early child development should be delivered using large pictorial cards and interactive methods, such as provided in the CBNP community kit. Mothers' and carers' confidence and feeling of security and household status influence their children's nutritional intake and should be taken into account when delivering

messages on feeding and care practices. Messages and visuals should pair to form a consistent narrative structure.

- **Invite mothers or carers and babies to mother and baby groups.** Time can be dedicated to mother and baby groups in child-friendly spaces. Mother and baby groups enhance maternal knowledge and practice of early childhood development activities and strengthen connections among women. Peer demonstrations and support enhance care practices knowledge and experience. This direct and continuing social support is one of the key elements in improving maternal mood and fostering positive psychological and community resilience. The groups also provide safe spaces for babies to interact with their carers and one another and for carers to watch and learn from each other.
- **Visit mothers or carers in their homes.** Home visits allow an integrated holistic approach tailored to the infant's or young child's needs. This is particularly beneficial for infants with developmental delays or disabilities who may need additional individual attention. Health, nutrition, hygiene, infant stimulation and responsive interactive parenting can be addressed in a supportive manner. Home visits provide an opportunity to praise good parenting and feeding practice and model additional practices.
- **Involve communities in early childhood development activities.** Communities should be engaged in the discussing, planning, decision making, implementing, monitoring and evaluating early childhood development activities from the outset. Open discussion meetings through community groups can advertise and explain ideas and help people agree on the best methods. They also help raise awareness about the importance of these activities.
- **Encourage child participation.** Young children are active agents in their own development process and shape their environment through their participation. Mothers or carers should be encouraged to listen to and consult with their infants and children in any activities. Creative media of art and play can help very young children express their views. Children with mental and physical disabilities or children with HIV are at higher risk of being neglected and not receiving appropriate nutrition or play opportunities. Every effort should be made to ensure the willing participation of children from vulnerable groups.

4.15. Failure to Respond to Treatment in OPD-SAM

Possible reasons for failure to respond to treatment:

A child may not gain weight or may lose weight because of undetected illness or poor quality of care, poor adherence to treatment or poor functioning of the service; other reasons may be socioeconomic.

Underlying illness:

- Unrecognized infections, e.g., persistent diarrhoea, dysentery, otitis media, pneumonia, urinary tract infection, malaria, helminthiasis, hepatitis, TB or HIV infection
- Vitamin or mineral deficiency
- Other serious underlying diseases, e.g., congenital abnormalities, physical or mental handicaps, inborn errors of metabolism
- Psychological trauma

Sub-optimal individual care and services:

- Initial assessment missed a reason the child is ineligible for admission to OPD-MAM/SAM
- Poor assessment of appetite on admission and follow-up visits
- Inadequate instructions given to mothers and carers on feeding and caring
- Breaks in supply of RUSF or RUTF
- Routine drugs not available, or not taken
- Any other non-adherence to the protocol

Socioeconomic situation:

- Sharing of RUTF or RUSF with other family members level because of lack of food in the household or lack of income leading to sale of RUSF or RUTF
- Poor feeding or caring practices due to lack of time, other pressures or poor knowledge
- Weak health and nutrition services for vulnerable populations or people in hard-to-reach areas

4.16. End of Treatment in OPD-MAM/SAM

Infants under 6 Months of Age

Decide end of treatment for OPD-MAM/SAM:

- Check whether the infant reaches the **end of treatment criteria** for two consecutive visits:
 - Breastfeeds effectively or feeds well with replacement feeding
 - Gains adequate weight, follows the WAZ growth curve (serial weight measurements follow consistently the on or between the same percentiles)
 - Has a WLZ at least ≥ -2
 - Has completed age-specific immunisation schedules
 - Has a mother or carer who has no ongoing health or psychological condition requiring intensive treatment
- Advise the mother or carer to continue attending monthly facility-based and community based nutrition services and to return to the health facility if a problem occurs or the infant's condition deteriorates.

Children 6–59 Months of Age

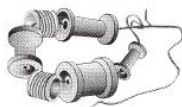
Decide end of treatment for OPD-MAM/SAM:

- Check whether the child reaches the **end of treatment criteria** for two consecutive visits:
 - MUAC ≥ 125 mm or WHZ ≥ -2 ; use the same anthropometry for start and end of treatment
 - Absence of oedema
 - Child alert and well
- If the child is absent for two consecutive visits, record the third missed visit as defaulting, and request a home visit to inquire the reason for defaulting.
- Verify whether the immunization schedule has been completed, and vaccinate the child if needed.
- Complete the *OPD-MAM/SAM Register* and the *OPD-MAM/SAM Record*: Date; treatment outcome (cured, died, defaulted, non-cured or referred out), end anthropometry, length of stay, weight gain.
- Advise the mother or carer to continue attending monthly facility-based and community based nutrition services and to return to the health facility if a problem occurs or the child's condition deteriorates.

4.17. Toys

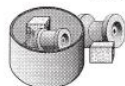
Ring on a string (from 6 months)

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.



In-and-out toy (from 9 months)

Any plastic or cardboard container and small objects (not small enough to be swallowed).



Drum (from 12 months)

Any tin with a tightly fitting lid.

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.



Mirror (from 18 months)

A tin lid with no sharp edges.

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.

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.



Stacking bottle tops (from 12 months)

Cut at least three identical round plastic bottles in half and stack them.



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.



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4. 18. Planning for OPD-MAM/SAM

- **Team:** The team of health workers (physician, nurse, midwife, nutrition counsellor, pharmacist and food distributor) is responsible for organising and providing care, including monitoring and reporting. Providers organise sharing of roles and responsibilities, and link to supervisors for support. Below is a list of activities with responsible persons:

OPD-MAM/SAM activities for children under 5:	Suggested responsible person:
Emergency triage and management	Physician or nurse
Routine screening	Physician, nurse and nutrition counsellor
Anthropometric measurement	Nutrition counsellor
Initial assessment and history	Physician
Appetite test	Physician and nurse
Differential diagnosis and treatment plan and referral decision	Physician and nurse
Start of treatment, counselling and prescription of drugs and RUTF or RUSF	Physician (and nurse)
Provision of drugs and RUTF or RUSF	Pharmacist
Follow up visit: assessment, vaccination schedule completion, progress monitoring	Nurse (or physician, midwife)
Decision end of treatment	Nurse (or physician, midwife)
Health and nutrition education	Nutrition counsellor
Mother's involvement in care, and care of the mother	Nurse, midwife, nutrition counsellor, mental health counsellor and CHS
Registration	Nurse
Recording on treatment card and ration card during consultation	Physician and nurse
Monthly reporting	Responsible nurse

Infrastructure and space: Health facility staff decide how to use available space to organise the different activities of OPD-MAM/SAM. Minimal infrastructure requirements are running water, gender-sensitive latrines, a shelter or protected waiting area, adequate storage for therapeutic and supplementary food supplies and a privacy-protected area for measurements and consultations.

Equipment and renewable supplies of drugs, food products, job aids and forms:

Minimum requirements are covered in **Appendix 10**. Renewable supply needs are forecasted annually and requested quarterly using the *Quarterly Nutrition Supply Request*, which may be adjusted for fluctuations in caseload or corrected for stock balance. The average monthly need of RUTF and RUSF in OPD-MAM/SAM is automatically calculated by the *Quarterly Nutrition Supply Request* spreadsheet and is based on:

- **RUTF:** A child with SAM is on average two years of age and consumes about 20 sachets a week, which corresponds to 15 kg per 6 to 8-week treatment (or one carton of RUTF per child). The total requirement of RUTF per child depends on the child's weight at the start of treatment, adjusted for weight gain during treatment and treatment duration. A correction for defaulting may be anticipated.
- **RUSF:** A child with MAM receives seven sachets of RUSF a week, which corresponds to about 5 kg per 8-week treatment. The total requirement of RUSF per child depends on the treatment duration only.

RUTF and RUSF requirements for use in OPD for children 6–59 months of age:

Calculation of RUTF requirements for use in

OPD-SAM

Number of OPD-SAM clients	A	
Monthly sachet consumption per child (@ 20 sachets/child/week)	B	= 80
Monthly sachet consumption for a site	C	= A x B
Monthly carton consumption for a site	D	= C/150
Monthly net weight (MT) (@13.8 kg/carton)	E	= D x 13.8/1000
Monthly gross weight (MT) (@14.9 kg/carton)	F	= D x 14.9/1000

Calculation of RUSF requirements for use in

OPD-MAM

Number of OPD-MAM clients	A	
Monthly sachet consumption per child (@ 7 sachets/child/week)	B	= 28
Monthly sachet consumption for a site	C	= A x B
Monthly carton consumption for a site	D	= C/150
Monthly net weight (MT) (@13.8 kg/carton)	E	= D x 13.8/1000
Monthly gross weight (MT) (@14.9 kg/carton)	F	= D x 14.9/1000

4.19. Monitoring the Quality of Case Management in OPD-MAM/SAM

- **Team:** The responsible health worker, with support from the team members (physician, nurse, midwife, nutrition counsellor), monitors the quality of individual care and services, focusing on appropriate admission, progress of treatment and treatment outcome, which reflects adherence to guidelines and adequate organisation of care.
- **Recording:** On admission and each follow-up visit, the physician or nurse records information in the register and on the treatment card to monitor individual clinical care until the end of treatment. The treatment card indicates what to assess and what to monitor during progress and at the end of treatment. A unique registration number is provided and recorded on all forms.
- **Referral tracking:** Referral slips track movement of children with SAM and MAM between the community and health facilities and/or services.
- **Adaptation to care:** On each visit, health workers adapt health and nutrition counselling to the client's health and nutritional status, progress and needs. If nutritional status stagnates or worsens, a history and clinical examination may reveal the causes, or referral to hospital may be necessary. If clients do not return to the health facility, the CHS may ask the CHW to do a defaulting and mortality audit.
- **Indicators:** Date, nutritional status and type, start and end of treatment are recorded in the register and on the treatment card. Standard monitoring categories are listed below. LOS in treatment, severity on admission, weight gain during treatment are indicated in the register and on the record.
- **Monthly reporting:** Information on admissions and end of treatment from the register is tallied to fill the monthly report. The team uses the monitoring tools to verify quality by observing care, discussing with service providers and users and checking monitoring records.

Monitoring categories in OPD-MAM/SAM for children 6–59 months of age:

ENTRY (start of treatment in OPD-MAM/SAM)	
Newly admitted	Child met criteria for start of treatment This category includes relapsed cases (child relapsed within 2 months of ending treatment of previous episode; 2 months indicates recovery of the same episode of illness).
Returned defaulter	Child defaulted and returned within 2 months to continue treatment (2 months indicate the same episode of illness)
Referred from OPD-MAM°	Child deteriorated in OPD-MAM and started treatment (<i>this category is not retained for OPD-MAM</i>)
Referred from IPD-SAM°	Child stabilised in IPD-SAM and continued treatment in OPD-SAM until recovery
Transferred-in	Child moved from another site to continue the same level of care
EXIT (end of treatment in OPD-MAM/SAM)	
Cured	Child remained in treatment until full recovery and met criteria for end of treatment
Died	Child died while in treatment
Defaulted	Child absented for two consecutive visits (exited on third absence) The reason for defaulting is investigated (died, moved, other).
Non-cured	Child has remained in treatment for 3 months and has not reached the end of treatment criteria despite full assessment and treatment
Medical referral	Child was referred to specialised care for treatment of underlying condition (e.g., child with TB and SAM was referred to TB treatment site where SAM treatment will ideally continue)
Transferred-out	Child moved to another site to continue same level of care

4.20. Monitoring the Quality of OPD-MAM/SAM Services

- **Aim:** Monitor key performance indicators that are compared to national standards to interpret the level of performance of IMAM services and inform service improvements.
- **Methods:** Key performance indicators are calculated monthly per health facility based on information on children who started treatment and ended treatment in OPD-SAM and OPD-MAM using the respective registers (and treatment cards).
- **Tools:** These include registers, treatment cards, tally sheets, monthly reporting forms and an electronic database for a national IMAM repository. *OPD-SAM and OPD-MAM Monthly Reporting Forms* are summary spread sheets for easy recording.
- **Indicators:** Routine data are tallied and amalgamated monthly in the reporting forms for OPD-MAM, OPD-SAM and IPD-SAM.

Key indicators for a given month are:

- Number of new admissions (incidence)
- Number of children in treatment (beneficiaries currently registered)
- Cure rate, or proportion of children who ended treatment cured out of all children that ended treatment (discharges)
- Death rate, or proportion of children who ended treatment because they died out of all children that ended treatment (discharges)
- Default rate, or proportion of children who ended treatment because they defaulted out of all children that ended treatment (discharges)
- Therapeutic and supplementary food used and in stock

Indicators for OPD-MAM/SAM:

Cure rate (%)	= $\frac{\text{Number of children cured that month} \times 100}{\text{Total number of children who ended treatment that month}}$
Death rate* (%)	= $\frac{\text{Number of children who died that month} \times 100}{\text{Total number of children who ended treatment that month}}$

Default rate (%)	= $\frac{\text{Number of children who defaulted that month} \times 100}{\text{Total number of children who ended treatment that month}}$
Average length of stay (days)	= $\frac{\text{Total number of days in treatment for all children who ended treatment cured}}{\text{Total number of children who ended treatment cured that month}}$
Average weight gain (g/kg/day)	= $\frac{\text{Total weight gain of children with wasting° or oedema who ended treatment cured}}{\text{Total number of children with wasting or oedema who ended treatment cured that month}}$
<i>Total number of children who ended treatment in OPD is all children who have been cured, died, defaulted and non-cured to treatment; * Case fatality during treatment; ° Calculated separately for severe or moderate wasting; Calculated differently in case of oedema from the minimum weight and days since minimum weight.</i>	

Performance is compared to national standards or benchmarks for quality of IMAM services for children 6–59 months. If IMAM services do not comply with national standards, a narrative report should explain the reasons for the outcomes and suggest actions to address the issues.

National standards of quality of IMAM services for children 6–59 months of age:

Indicator	IPD-SAM [^]	IPD-SAM [°]	OPD-SAM	OPD-MAM
Cure rate	/	> 75%	> 75%	> 75%
Default rate	< 15%	< 15%	< 15%	< 15%
Death rate*	< 10%	< 10%	< 10%	< 3%
Average length of stay	< 7 days	< 30 days	< 56 days	< 56 days
Average weight gain	/	> 5 g/kg/day	> 5 g/kg/day	> 5 g/kg/day
[^] Option 1: IPD-SAM refers children to OPD-SAM after stabilisation; [°] Option 2: IPD-SAM retains children until full recovery; * Case-fatality rate during treatment.				

Other indicators:

Average weight gain (AWG) in OPD-SAM is calculated for all (or a sample of) children with severe wasting or bilateral pitting oedema separately:

For children with severe wasting, first calculate weight gain of the individual child who ended treatment, and next calculate the AWG of all children who ended treatment as cured, expressed in g/kg/day:

$$\text{Weight gain} = \frac{[\text{End of treatment weight} - \text{Admission weight (g)}]}{\text{Admission weight (kg)}} \times \text{Length of stay from start to end of treatment cured (days)}$$

$$\text{AWG} = \frac{\text{Total weight gain of severely wasted children who ended treatment cured}}{\text{Total number of wasted children who ended treatment cured}}$$

For children with bilateral pitting oedema, first calculate weight gain of the individual child who ended treatment as cured starting from the moment when oedema resolved, and next calculate the AWG of all children who ended treatment as cured, expressed in g/kg/day:

$$\text{Weight gain} = \frac{[\text{End of treatment weight (g)} - \text{Minimum weight (g)}]}{\text{Minimum weight (kg)}} \times \text{Length of stay from minimum weight to end of treatment cured (days)}$$

$$\text{AWG} = \frac{\text{Total weight gain of oedematous children who ended treatment cured}}{\text{Total number of oedematous children who ended treatment cured}}$$

Number of children who relapsed after cure: Relapse means deterioration within 2 months after recovery and up to the point that criteria to start treatment are reached. The period of 2 months after recovery is used to indicate that the deterioration is from the same episode of illness and not a new episode. Relapse may indicate that the health worker or child, or both, did not adhere to the treatment protocol or that the environment

the child lives in is highly unfavourable to maintain good health. The underlying reasons should be investigated and resolved.

Timeliness of treatment: The timeliness of referral from the community and start of treatment can be estimated by assessing the severity of the nutritional status on referral or at the start of treatment, and should be interpreted with information on service access in the catchment area. At the health facility, a *Screening Tally Sheet* may record MUAC on admission. Cut-offs to indicate early or later referral may be set depending on the context. Late start of treatment may indicate barriers to access services or that community-based nutrition services were inadequate. The underlying reasons should be investigated and resolved to improve coverage.

Case mapping: When a child with SAM is identified and attends treatment, the village of origin can be noted on a tally sheet that lists all the villages of the catchment area of the health facility. During supportive supervision meetings, the tally sheets are reviewed. If many cases are coming from particular villages, it may mean that malnutrition is a problem in that area or that malnutrition is the same everywhere but good case finding is happening in some villages. Villages with no cases may indicate ineffective sensitisation and screening. Findings can be correlated with referrals/attendance and timeliness of treatment to further indicate the effectiveness of case finding in those areas. The tally of admissions helps assess the coverage of the treatment service.

Referral rate to a higher level of care—from OPD-SAM to IPD (or from OPD-MAM to OPD-SAM)—may indicate that children were being identified late or that the quality of case management was inadequate. It may be calculated as follows:

$$\text{Referral rate} = \frac{\text{Number of cases referred to a higher level}}{\text{Total number of cases treated at a given level of care}}$$

MODULE 5. IPD-SAM

Job Aids:

- 5.1. Overview of Activities in IPD-SAM
- 5.2. Emergency Triage Assessment and Treatment (ETAT) in IPD-SAM
- 5.3. Emergency Management in IPD-SAM
- 5.4. Differential Diagnosis in IPD-SAM
- 5.5. Initial Assessment of Children 6–59 Months of Age in IPD-SAM
- 5.6. Initial Assessment of Infants under 6 Months of Age in IPD-SAM
- 5.7. Case Management of Children 6–59 Months of Age in IPD-SAM
- 5.8. Case Management of Infants Under 6 Months of Age in IPD-SAM
- 5.9. Treatment Protocol in IPD-SAM
- 5.10. Drug Dosages in IPD-SAM
- 5.11. Use of ReSoMal
- 5.12. Management of TB in SAM
- 5.13. Feeding Protocol of Children 6–59 Months of Age in IPD-SAM
- 5.14. Alternative Therapeutic Milk Recipes
- 5.15. Feeding Protocol of Breastfeeding Infants under 6 Months of Age in IPD-SAM
- 5.16. Feeding Protocol of Non-Breastfeeding Infants under 6 Months of Age in IPD-SAM
- 5.17. Monitoring of Vital Signs in IPD-SAM
- 5.18. How to ... in IPD-SAM
- 5.19. Failure to Respond to Treatment in IPD-SAM
- 5.20. Involving Mothers in Care
- 5.21. Toys
- 5.22. Planning for IPD-SAM

5.23. Monitoring the Quality of Care of IPD-SAM

5.24. Monitoring the Quality of IPD-SAM Services

Appendices:

Appendix 6. RUTF look-up table and advice

Appendix 7. F75 look-up tables

Appendix 8. F100 look-up tables

Appendix 9. Therapeutic feeding look-up tables for infants under 6 months of age

Appendix 11. Minimum materials for IPD-SAM

Forms and registers:

Form 2. IPD-SAM Register

Form 7. IPD-SAM Record

Form 12. IPD-SAM Monthly Reporting Form

Form 15. BNA Questions Monthly Reporting Form

Form 17. Health Facility Referral Slip

Form 19. Prescription Card

Form 20. Health Facility Supervisory Checklists

Form 21. Quarterly Nutrition Supply Request Form

5.1. Overview of Activities in IPD-SAM

STABILIZATION (1 to 7 days)
ASSESS
Emergency Triage, Assessment and Treatment: assessment of emergency signs and prompt treatment
(ETAT is repeated as necessary), nutrition status should be known
Initial assessment:
Nutritional assessment of anthropometry
In-depth assessment including laboratory and other investigations
Differential diagnoses (Decision: treatment as inpatient or outpatient)
TREAT
Prevention of hypoglycaemia (Step 1)
Prevention of hypothermia (Step 2)
Prevention of dehydration (Step 3), includes electrolyte balance (Step 4)
Management of infections (Step 5) and of other medical conditions
Cautious feeding (Step 7), includes micronutrients balance (Step 6) (no weight gain)
DAILY CARE
Monitoring of priority signs, improvement, complications, failure to respond to treatment
INVOLVING MOTHERS IN CARE
Health maternal nutrition
Psychosocial support of mother or carer
Emotional and sensorial stimulation of the child (Step 9)
Health and nutrition counselling of mother or carer
TRANSITION (1 to 3 days)
DAILY CARE
Monitoring of priority signs, improvement, complications, failure to respond to treatment, continued
Transition to feeding for catch-up growth (start of cautious weight gain)
Monitoring of priority signs, improvement, complications, failure to respond to treatment
Preparation for discharge from hospital and transfer to OPD-SAM to continue treatment
REHABILITATION in IPD-SAM (If no OPD-SAM)(1 to 8 weeks)
DAILY CARE
Feeding for catch up growth during rehabilitation (weight gain), includes introduction of family foods
Monitoring of signs of improvement, complications, failure to respond to treatment
Preparation for discharge from hospital to end treatment
END OF TREATMENT
Follow-on care in the community (Step 10)

5.2. Emergency Triage Assessment and Treatment (ETAT) in IPD-SAM

Assess and treat the following signs in order of emergency (remembered with the letters ABCD):

Airway and Breathing, “A” and “B”:

- Does the child’s breathing appear obstructed? Look and listen to determine whether there is poor air movement during breathing.
- Does the child have severe respiratory distress? Is breathing very laboured, uses the child auxiliary muscles for breathing (shows head nodding), is breathing very fast, appears the child to tire easily or is not able to feed?
- Does the child have central cyanosis (the tongue and inside of the mouth show a bluish/purplish discoloration)?
➔ Treat for (very) severe pneumonia

Circulation “C” - Lethargic and Coma “C”

- Are the child’s hands cold? Check with the back of the hand. Is the capillary refill time longer than 3 seconds? If capillary refill takes longer than 3 seconds, check the radial pulse. If the radial pulse is weak and fast, the child is in **shock**. If the radial pulse is strong and not obviously fast, the child is **not** in shock. If you cannot feel a radial pulse of an infant (less than 1 year of age), feel the brachial pulse or, if the infant is lying down, the femoral pulse. Or feel the carotid. If the room is very cold, rely on the pulse to determine whether the child is in shock.
➔ Treat for shock, septic shock, congestive heart failure
- Is the child lethargic or in coma (unconscious)? Check the level of consciousness on the ‘AVPU’ scale (A alert, V responds to voice, P responds to pain, U unconscious). Is the child awake and alert? If not, try to rouse the child by talking or shaking the arm. A child who is not alert but responds to a voice is lethargic. If there is no response, ask the mother whether the child has been abnormally sleepy or difficult to wake.
➔ Treat for shock, septic shock, congestive heart failure. (If *not lethargic or unconscious, treat routinely*)
- Does the child during rehydration or feeding develop signs of increase in respiratory rate of ≥ 5 breaths/minute, increase in pulse rate of ≥ 25 beats/minute, distension of the jugular veins, enlarged liver, cold hands and feet and cyanosis of the fingertips and under the tongue?
➔ Treat for congestive heart failure

Convulsions “C”

- Is the child convulsing? Are there spasmodic repeated movements in an unresponsive child?
→ Treat for convulsions

Hypoglycaemia

- Does the child sleep with eyelids open? Does the child has low body temperature ($< 36.5^{\circ}\text{C}$), lethargy, limpness and loss of consciousness?
→ With or without signs or low blood glucose measure, presumptively treat with glucose or prompt therapeutic feeding

Hypothermia - Hyperthermia

- Does the child have a low body temperature ($< 35.5^{\circ}\text{C}$ axillary)? Low body temperature is a sign of hypoglycaemia and sepsis. Warming the child is an emergency treatment.
- Does the child have a very high body temperature (> 38.5 axillary)? Cooling the child with tepid sponging instead of providing antipyretics is the recommended treatment. The child with severe acute malnutrition has body temperature regulation disturbances and tends to take the temperature of the environment. Keep the child warm as a routine treatment.
→ Cool the child in case of high fever and avoid giving paracetamol

Severe pallor

- Does the child show severe pallor?
→ Treat for severe anaemia

Dehydration, “D” without shock

- Does the child have diarrhoea with recent sunken eyes? Ask the mother whether the child’s eyes recently became sunken. In severe acute malnutrition ‘Sunken eyes’ and ‘Skin pinch’ are not reliable signs for dehydration because of loss of subcutaneous fat.
→ Treat for dehydration without shock

Blinding eye problems

- Does the child have signs of corneal clouding, corneal ulceration or corneal ulceration?
→ Treat for vitamin A deficiency and other blinding eye problems

5.3. Emergency Management in IPD-SAM

CONDITION	IMMEDIATE ACTION
Severe pneumonia	If the child with SAM has signs of severe pneumonia (central cyanosis, severe respiratory distress, inability to drink or vomiting everything, convulsions, low chestwall indrawing, stridor in a calm child, fast breathing): 1. Give oxygen, 1-2 litres/minute. 2. Keep the child warm. 3. Give antibiotics. 4. Initiate careful therapeutic feeding by nasogastric tube.
Shock	If the child with SAM has signs of shock (cold hands with slow capillary refill (longer than 3 seconds) and/or weak or fast pulse) and is lethargic or unconscious: 1. Give oxygen, 1–2 litres/minute. 2. Keep the child warm. 3. Give sterile 10 % glucose 5 ml/kg IV. 4. Give IV fluid at 15 ml/kg over 1 hour, using one of the following solutions in order of preference: • Half-strength Darrow's solution with 5 % dextrose, or • Ringer's lactate with 5% dextrose* <i>* Add sterile potassium chloride (20 mmol/L).</i> (Or if above not available use half-normal saline with 5% glucose*) 5. Monitor pulse and respiration rates every 10 minutes. 6. Give antibiotics. STOP IV if signs of over-hydration that may lead to congestive heart failure: fast breathing, increase in respiratory rate ≥ 5 breaths/min and in pulse rate ≥ 25 beats/min. Other signs of heart failure are: distension of jugular veins, enlarged liver, eye-lid oedema, gallop rhythm, fine crackling at lungs. If there are signs of improvement after the first hour of IV fluid, repeat IV fluid 15 ml/kg over second hour. If there are NO signs of improvement after the first hour of IV fluid, assume child has septic shock. In this case: 1. Give maintenance fluids 4 ml/kg/hour while waiting for blood. 2. Order 10 ml/kg fresh whole blood and when blood is available, stop oral intake and IV fluids. 3. Give a diuretic. Furosemide 1 ml/kg IV at the start of the transfusion is an appropriate choice. 4. Transfuse whole fresh blood 10 ml/kg slowly over 3 hours. If there are signs of heart failure, give 7 ml/kg packed cells instead of whole blood.

CONDITION	IMMEDIATE ACTION
	If the child with SAM has signs of shock, and is <u>not</u> lethargic or unconscious: 1. Keep the child warm. 2. Give 10% glucose 5 ml/kg or 10% glucose or sugar water 50 ml (infants 25 ml) orally or by nasogastric tube. 3. Give antibiotics. 4. Proceed immediately to full assessment, treatment and initiate oral or nasogastric feeding with F-75
Hypoglycaemia	If the child with SAM has hypoglycaemia (blood glucose <3 mmol/L or <54 mg/dl): 1. Give sterile 10% glucose 5 ml/kg IV, then 10% glucose or sugar water 50 ml (infants 25 ml) by nasogastric tube, or what is first available. 2. Keep the child warm. 3. Give antibiotics. 4. Start feeding with F-75.
Hypothermia	If the child with SAM has signs of hypothermia (<35°C axillary or <35.5°C rectal temperature): 1. Warm the child 5. Give sterile 10% glucose 5 ml/kg IV or 10% glucose or sugar water 50 ml (infants 25 ml) by nasogastric tube. 2. Give antibiotics. 3. Start feeding with F-75.
Convulsions	If the child with SAM has signs of convulsion: 1. Give diazepam or paraldehyde rectally. 2. Position the unconscious child: turn on the side to reduce the risk of aspiration and stabilize the body position. 3. Give sterile 10% glucose 5 ml/kg by IV.
Severe anaemia	If the child with SAM has very severe anaemia (Hb <4 g/dl or <6 g/dl and respiratory distress), a blood transfusion is required: 1. Give whole fresh blood 10 ml/kg body weight slowly over 3 hours. If there are signs of anaemic heart failure, give 7 ml/kg packed cells over 3 hours rather than whole blood. 2. Stop all oral intake and IV fluids during the transfusion. 3. Give a diuretic. Furosemide 1 ml/kg IV at the start of the transfusion is an appropriate choice.
Blinding eye signs	If the child with SAM has corneal clouding or ulceration: 1. Give vitamin A immediately (< 6 months 50,000 IU, 6–12 months 100,000 IU, > 12 months 200,000 IU) and repeat on day 2 and day 14. 2. For corneal ulceration, instil 1 drop of atropine (1%) into affected eyes for pain and prevent the lens from pushing out. 3. Put chloramphenicol eye drops every 3 hours or tetracycline eye ointment every 4 hours and bandaging when child is stable.

CONDITION	IMMEDIATE ACTION
Dehydration	If the child with SAM and acute diarrhoea or severe vomiting has a sign of dehydration (recent sunken eyes - recent = with onset of diarrhoea), and is <u>not</u> lethargic or unconscious: DO NOT GIVE IV FLUID, but rehydrate orally: 1. Give 10% glucose or sugar water 50 ml (infants 25 ml) orally or by nasogastric tube. 2. Give ReSoMal 5 ml/kg every 30 minutes for 2 hours orally (or, if child is too ill, give by nasogastric tube). 3. Monitor pulse and respiration rates every 30 minutes during rehydration. 4. Then, give ReSoMal 5-10 ml/kg/2-hours in alternate hours with F-75 10 ml/kg/2-hours for up to 10 hours. STOP if signs of hydration: clinically well and alert, normal eyes, tears, moist tongue, drinks normally. STOP if signs of over-hydration that may lead to congestive heart failure: fast breathing, increase in respiratory rate ≥ 5 breaths/min and pulse rate ≥ 25 beats/min.
Congestive heart failure	If the child with SAM develops signs of fluid overload or heart failure during rehydration (first sign is fast breathing; other danger signs are increase in respiratory rate ≥ 5 breaths/min and in pulse rate ≥ 25 beats/min, distension of jugular veins, enlarged liver, eye-lid oedema, gallop rhythm, fine crackling at lungs): 1. Stop all intake of food. Stop all IV fluid. Do not give any fluid until the heart failure has improved. 2. Give furosemide, 1 mg/kg IV. Monitor the child closely when giving furosemide and reassess the child. 3. Give digoxin, 15 $\mu\text{g/kg}$ IV only if diagnosis of heart failure is unmistakable (elevated jugular venous pressure).

Chart 8. How to give intravenous fluids to a child in shock with severe malnutrition

Give this treatment only if the child has signs of shock (usually there will also be a reduced level of consciousness, i.e. lethargy or loss of consciousness):

- ▶ Insert an IV line (and draw blood for emergency laboratory investigations).
- ▶ Weigh the child (or estimate the weight) to calculate the volume of fluid to be given.
- ▶ Give IV fluid at 15 ml/kg over 1 h. Use one of the following solutions according to availability:
 - Ringier's lactate with 5% glucose (dextrose);
 - Half-strength Darrow's solution with 5% glucose (dextrose);
 - 0.45% NaCl plus 5% glucose (dextrose).

Weight	Volume of IV fluid Give over 1 h (15 ml/kg)	Weight	Volume of IV fluid Give over 1 h (15 ml/kg)
4 kg	60 ml	12 kg	180 ml
6 kg	90 ml	14 kg	210 ml
8 kg	120 ml	16 kg	240 ml
10 kg	150 ml	18 kg	270 ml

- ▶ Measure the pulse rate and volume and breathing rate at the start and every 5–10 min.

If there are signs of improvement (pulse rate falls, pulse volume increases or respiratory rate falls) and no evidence of pulmonary oedema

- repeat IV infusion at 15 ml/kg over 1 h, then
- switch to oral or nasogastric rehydration with ReSoMal at 10 ml/kg per h up to 10 h (see p. 204);
- initiate re-feeding with starter F-75 (see p. 209).

If the child fails to improve after two IV boluses of 15 ml/kg,

- give maintenance IV fluid (4 ml/kg per h) while waiting for blood;
- when blood is available, transfuse fresh whole blood at 10 ml/kg slowly over 3 h (use packed cells if the child is in cardiac failure); then
- initiate re-feeding with starter F-75 (see p. 209);
- start IV antibiotic treatment (see p. 207).

If the child deteriorates during IV rehydration (breathing rate increases by 5/min and pulse rate increases by 15/min, liver enlarges, fine crackles throughout lung fields, jugular venous pressure increases, galloping heart rhythm develops), stop the infusion, because IV fluid can worsen the child's condition by inducing pulmonary oedema.

Chart 9. How to give diazepam rectally

■ Give diazepam rectally:

- ▶ Draw up the dose from an ampoule of diazepam into a tuberculin (1-ml) syringe. Base the dose on the weight of the child, when possible. Then remove the needle.
- ▶ Insert the syringe 4–5 cm into the rectum, and inject the diazepam solution.
- ▶ Hold the buttocks together for a few minutes.

Age (weight)	Diazepam given rectally 10 mg/2 ml solution Dose 0.1 ml/kg
2 weeks to 2 months (< 4 kg)*	0.3 ml
2–< 4 months (4–< 6 kg)	0.5 ml
4–< 12 months (6–< 10 kg)	1.0 ml
1–< 3 years (10–< 14 kg)	1.25 ml
3–< 5 years (14–< 19 kg)	1.5 ml

* Use phenobarbital (200 mg/ml solution) at a dose of 20 mg/kg to control convulsions in infants < 2 weeks of age.

Weight 2 kg – initial dose, 0.2 ml; repeat 0.1 ml after 30 min } If convulsions continue

Weight 3 kg – initial dose, 0.3 ml; repeat 0.15 ml after 30 min }

If convulsions continue after 10 min, give a second dose of diazepam (or give diazepam IV at 0.05 ml/kg = 0.25 mg/kg if IV infusion is running).

Do not give more than two doses of diazepam.

If convulsions continue after another 10 min, suspect status epilepticus:

- ▶ Give phenobarbital IM or IV at 15 mg/kg over 15 min;
- or
- ▶ Phenytoin at 15–18 mg/kg IV (through a different line from diazepam) over 60 min. Ensure a very good IV line, as the drug is caustic and will cause local damage if it extravasates.

■ If high fever:

- ▶ Undress the child to reduce the fever.
- ▶ Do not give any oral medication until the convulsion has been controlled (danger of aspiration).
- ▶ After convulsions stop and child is able to take orally, give paracetamol or ibuprofen.

Warning: Always have a working bag and mask of appropriate size available in case the patient stops breathing, especially when diazepam is given.

Chart 10. How to give glucose intravenously

- ▶ Insert an IV line, and draw blood for emergency laboratory investigations.
- ▶ Check blood glucose with a glucose monitoring stick. If the level is < 2.5 mmol/litre (45 mg/dl) in a well-nourished or < 3 mmol/litre (54 mg/dl) in a severely malnourished child or if blood glucose cannot be measured as no stick test is available, treat as for hypoglycaemia.
- ▶ Give 5 ml/kg of 10% glucose solution rapidly by IV injection

Age (weight)	Volume of 10% glucose solution as bolus (5 ml/kg)
< 2 months (< 4 kg)	15 ml
2–< 4 months (4–< 6 kg)	25 ml
4–< 12 months (6–< 10 kg)	40 ml
1–< 3 years (10–< 14 kg)	60 ml
3–< 5 years (14–< 19 kg)	80 ml

- ▶ Recheck the blood glucose in 30 min. If it is still low, repeat 5 ml/kg of 10% glucose solution.

- ▶ Feed the child as soon as he or she is conscious.

If the child is unable to feed without danger of aspiration, give:

- milk or sugar solution via a nasogastric tube (to make sugar solution, dissolve four level teaspoons of sugar (20 g) in a 200-ml cup of clean water), or
- IV fluids containing 5–10% glucose (dextrose) (see Annex 4, p. 377)

Note: 50% glucose solution is the same as 50% dextrose solution.

If only 50% glucose solution is available: dilute one part 50% glucose solution in four parts sterile water, or dilute one part 50% glucose solution in nine parts 5% glucose solution. For example, 10 ml 50% solution with 90 ml 5% solution gives 100 ml of approximately a 10% solution.

Note: To use blood glucose stick tests, refer to instructions on box. Generally, the strip must be stored in its box at 2–3°C, avoiding sunlight or high humidity. A drop of blood should be placed on the strip (it should cover all the reagent area). After 60 s, the blood should be washed off gently with drops of cold water and the colour compared with the key on the bottle or on the blood glucose reader. (The exact procedure varies for different strips.)

Note: Sublingual sugar may be used as an immediate 'first aid' measure in managing hypoglycaemia if IV access is impossible or delayed. Place one level teaspoonful of sugar moistened with water under the tongue every 10–20 min.

5.4. Differential Diagnosis in IPD-SAM

Differential Diagnosis of Dehydration and Shock in IPD-SAM:

	Dehydration	Severe dehydration without shock	Shock associated with severe dehydration	Septic shock	Heart failure
Key signs					
Watery diarrhoea	Yes	Yes	Yes		
Recent sunken eyes	Yes	Yes	Yes		
Cold hands			Yes	Yes	Yes
Weak or absent radial pulse			Yes	Yes	Yes
Fast radial pulse			Yes	Yes	Yes
Capillary refill			Slow, longer than 3 seconds	Slow, longer than 3 seconds	Slow, longer than 3 seconds
Slow skin pinch	(Yes) (Not reliable)	(Yes) (Not reliable)	(Yes) (Not reliable)		
Fast breathing					Yes

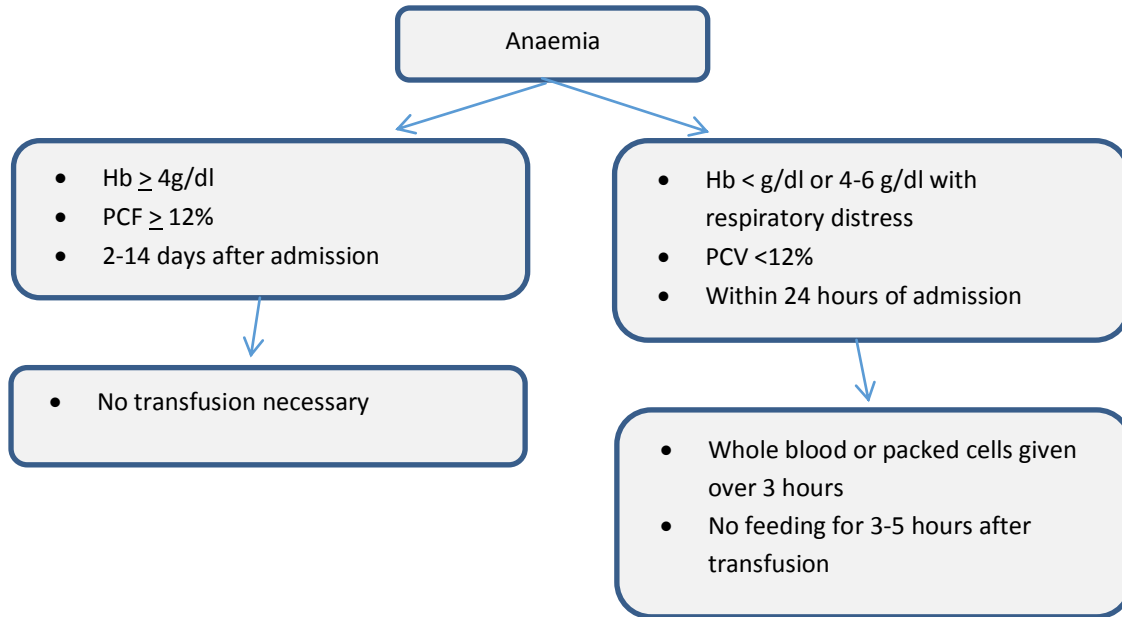
Mental state	Restless, irritable	Lethargic	Lethargic	Apathetic, lethargic, unconscious	Apathetic, lethargic, unconscious
Hypothermia			Yes or no	Yes or no	Yes or no
History of febrile illness				(Yes) (Not reliable)	
Enlarged neck veins					Yes
Enlarged liver					Yes
Other signs					
Thirst	Drinks eagerly				
Urine flow	Yes	No	No	Yes or no	Yes or no
Hypoglycemia	Sometimes	Sometimes	Sometimes	Sometimes	Sometimes
Response to rehydration	Yes	Yes	Yes	No	Fast rehydration or overhydration could induce heart failure

Diagnosis of heart failure in children with SAM:

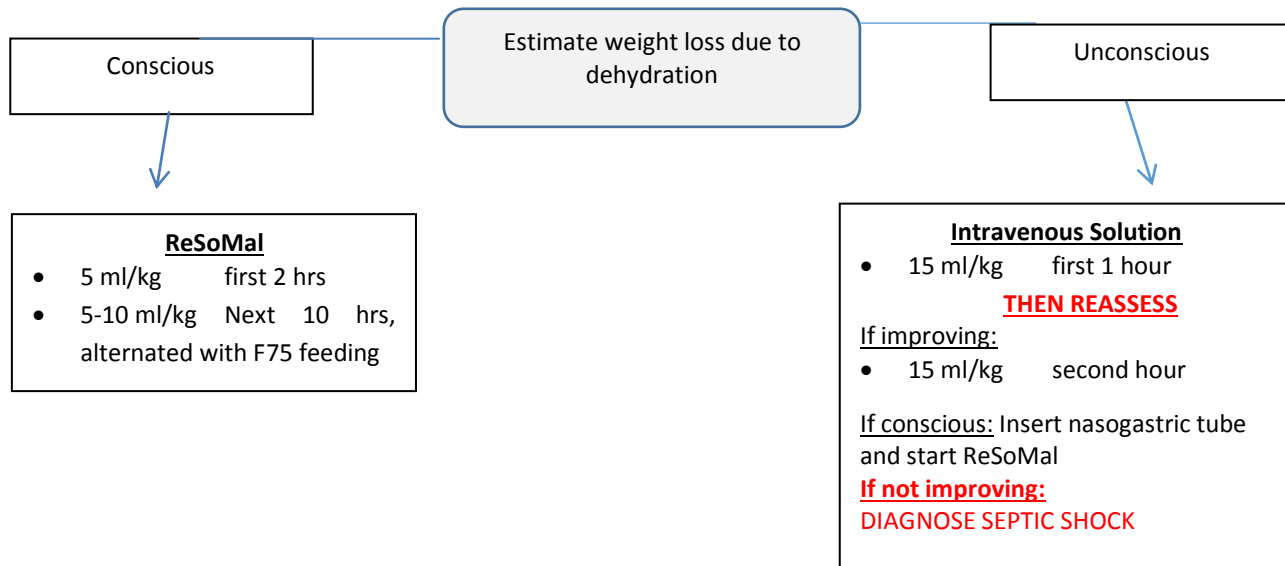
Heart failure can cause the following symptoms:

- Increase in pulse rate by 25 or more beats per minutes, confirm in 30 minutes
- Increase in respiratory rate by 5 or more breaths per minute during rehydration therapy or transfusion (confirm in 30 minutes; it is normal to have variability between breaths)
- Tachypnoea
 - More than 50 breaths/minute in infants < 12 months of age
 - More than 40 breaths/minute in children 12–59 months of age
 - If tachypnoea is present with weight loss, diagnose pneumonia
- Distended jugular vein (may be more evident on liver palpation)
- Appearance of expiratory grunting sounds
- Weight gain with signs of clinical deterioration
- Tenderness on palpation of the liver
- Increase in the costal margin of the liver
- Rales or crepitations
- Sudden death

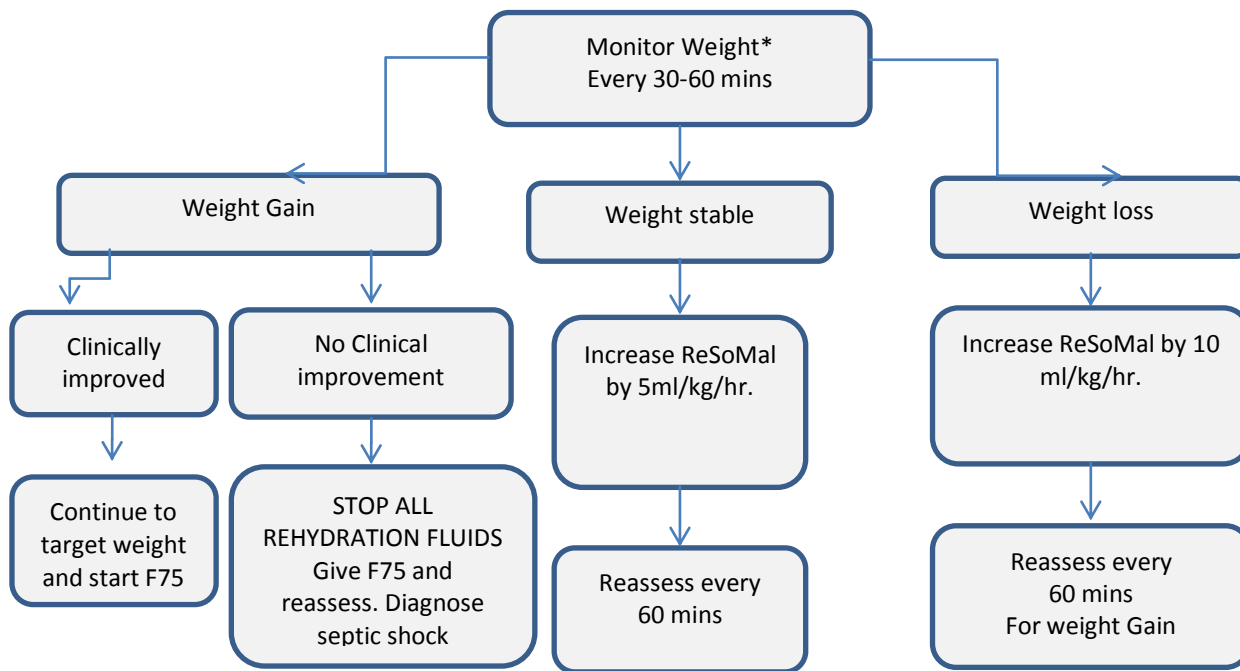
These changes may occur during rehydration or transfusion but may also result from major shifts of fluid and electrolytes during nutritional recovery. When the extra-cellular fluid shifts to the vascular space, there may be dilutional anaemia. This is normal during recovery and should not be treated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



Algorithm for blood transfusion in the treatment of severe anaemia in SAM



Algorithm for treatment of dehydration in a child with severe wasting



Algorithm for monitoring rehydration therapy in a severely wasted patient

* The aim is improvement of clinical status; the maximum weight gain should be no more than 5% of body weight

5.5. Initial Assessment of Children 6–59 Months of Age in IPD-SAM

Assess:

- Examine the child for:
 - Hypoglycaemia
 - Signs of shock: Lethargy or unconsciousness, cold hands, slow capillary refill (> 3 seconds), or weak (low volume), rapid pulse and low blood pressure
 - Signs of dehydration
 - Severe palmar pallor
 - Eye signs of vitamin A deficiency: Dry conjunctiva or dry cornea, Bitot spots, corneal ulceration (keratomalacia)

Children with vitamin A deficiency are likely to be photophobic and will keep their eyes closed. It is important to examine their eyes very gently to prevent corneal rupture.

- Signs of infection, including ear and throat infections, skin infection or pneumonia
- Severity of bilateral pitting oedema
- Skin changes of kwashiorkor: Hypo- or hyperpigmentation, desquamation (peeling skin), ulceration (spreading over limbs, thighs, genitalia and groin and behind the ears), exudative lesions (resembling severe burns), often with secondary infection (including candida)
- Fever: Temperature $\geq 36.5^{\circ}\text{C}$
- Hypothermia: Rectal temperature $< 35.5^{\circ}\text{C}$
- Mouth ulcers
- Recent intake of food and fluids
- Usual diet before the current illness
- Breastfeeding
- Loss of appetite
- Duration and frequency of diarrhoea and vomiting
- Type of diarrhoea (watery/bloody)
- Family circumstances
- Cough > 2 weeks

- Contact with tuberculosis
- Recent contact with measles
- Known or suspected HIV infection and/or exposure
- Appetite of children who are alert

Laboratory investigations: Rapid diagnostic tests for malaria, urinary infection and blood sugar (and HIV if relevant) are useful. Where health facilities can do laboratory tests and clinical assessment has indicated their need, tests may help diagnose specific pathophysiological problems that affect nutritional status.

Laboratory tests to consider for a comprehensive diagnosis in children with SAM:

Test	Result and significance
Blood glucose	Glucose concentration <54 mg/dl (3 mmol/L) indicates hypoglycaemia.
Blood smear or rapid malaria test	The presence of malaria parasites indicates infection.
Haemoglobin or packed-cell volume	Haemoglobin < 40 g/L or packed-cell volume < 12% indicates very severe anaemia and testing is indicated in case of severe palmar pallor.
Urine specimen	The presence of bacteria on microscopy (or > 10 leukocytes per high power field) indicates infection.
Faeces	The presence of blood indicates dysentery. Giardia cysts or trophozoites indicate infection.
Chest X-ray	Pneumonia causes less shadowing of the lungs in malnourished children than in well-nourished children. Vascular engorgement indicates heart failure. Bones may show rickets or fractures of the ribs.
Skin test for tuberculosis	This is often negative in children with tuberculosis or those previously vaccinated with BCG vaccine.
HIV test	Should be accompanied by counselling of the child's parents, and the result should be confidential

Decide:

Start of treatment (continue treatment after stabilisation)

IPD-SAM	OPD-SAM	OPD-MAM	FBNS and CBNS*
Complicated SAM - Bilateral pitting oedema (+++), or - Bilateral pitting oedema and MUAC < 115 mm or WHZ < -3, or - MUAC < 115 mm or WHZ < -3 with either or - A general danger sign or serious associated disease - Poor appetite - Weight < 4 kg (treated in IPD-SAM as infant < 6 months)	Uncomplicated SAM - Bilateral pitting oedema (+) or (++) without MUAC < 115 mm or WHZ < -3, or - MUAC < 115 mm or WHZ < -3 - Appetite preserved - Alert Continue treatment in OPD-SAM after stabilisation in IPD-SAM (Option 1) - Medical complications resolving and oedema reducing (to ++ or +) - Eats at least 75% of the daily amount of the RUTF diet or two full meals of RUTF - Alert	MAM MUAC ≥ 115 mm and < 125 mm or WHZ ≥ -3 and < -2	Normal nutrition - MUAC ≥ 125 mm - WHZ ≥ -2

5.6. Initial Assessment of Infants Under 6 Months of Age in IPD-SAM

The assessment of the infant is referred to IPD-SAM because of complicated SAM should follow the same procedures as for children 6–59 Months of age. In addition, the mother or carer should receive a breastfeeding assessment and psychosocial and health and nutrition assessment. Both outcomes should be considered to decide the severity of illness and treatment plan.

INFANT

- Check for **general danger signs**, in the same way as for children 6–59 months of age:
 - Inability to drink or breastfeed
 - Vomiting everything
 - Lethargy or unconsciousness
 - Convulsions (past or present)
- Ask, look, listen, and feel for main **symptoms of severe illness**:
 - Cough or difficult breathing with chest indrawing or stridor in calm child
 - Diarrhoea and sign of dehydration (recent sunken eyes)
 - High fever or stiff neck
 - Measles now or in the past 3 months, clouding cornea or other eye signs of vitamin A deficiency or deep/extensive mouth ulcers
 - Ear pain with tender swelling behind the ear
 - Severe palmar pallor
 - TB contact

How to assess difficult breathing in infants:

Respiratory distress in infants 0–< 2 months of age may be expressed by **slow breathing** (respiratory rate < 20 breaths/minute) or **fast breathing** (respiratory rate > 60 breaths/minute) or episodes of **apnoea** (cessation of breathing for > 15 seconds).

Respiratory distress in infants 2–6 months of age may be expressed by **fast breathing** (respiratory rate > 50 breaths/minute).

Infants under 12 months of age without respiratory distress or pneumonia generally breathe fast. Unless the infant's normal respiratory rate is known to be high, fast breathing should assume over-hydration or pneumonia. Careful evaluation, taking into account prior fluid administration.

- Do an in-depth assessment following the same guidance as for children 6–59 months of age:
 - Follow the IMNCI algorithm and the *IPD-SAM Record* and identify medical conditions that need treatment.
 - Do laboratory tests and ask for other investigations as indicated by the assessment.
- Verify nutritional status:
 - Ask about appetite.
 - Check for the presence of bilateral pitting oedema.
 - Measure weight and length and classify WHZ using the Moyo chart.
 - Plot the weight on the WAZ growth chart and look at the position and any drop across WAZ lines; Ask about recent weight loss or failure to gain weight.

WLZ is not available for infants < 45 cm long; WAZ is used instead to classify SAM.
- Do a breastfeeding assessment by asking the mother questions (without judging her choice of feeding method) and observing a breastfeeding session.

Ask, listen:

- What is the breastfeeding history? How often is the infant breastfed? Any problems or concerns?

- Has the infant received any other feeds? Water, liquid or milk? When did this start? Solid foods? When did this start?
- Observe breastfeeding and assess non-breastfeeding based on conversation

Identify, analyse:

- Structural abnormalities through physical examination
- Muscular abnormalities
- Breastfeeding based on observation

MOTHER

- Verify nutritional status: Check for the presence of bilateral pitting oedema and measure MUAC
- Investigate whether there is a medical problem that needs attention and referral.
- Investigate general wellbeing and identify any mental health problem that needs action according to mental health guidance, including care and social support.

Breastfeeding assessment outcome for the infant:

Severe breastfeeding difficulties (any of the following):

- Structural abnormalities
- Abnormality of tone, posture and movement interfering with breastfeeding
- Infant's arms and legs falling to the side when infant is held
- Infant's body stiff, hard to contain or move
- Excessive jaw opening or clenching
- Unwillingness/inability to suckle on breast
- Coughing and eye tearing while breastfeeding (sign of unsafe swallowing)

Moderate breastfeeding difficulties (any of the following):

- Infant not well attached
- Infant not suckling effectively
- Fewer than eight breastfeeds in 24 hours
- Infant receiving other foods or drinks

Mild/possible breastfeeding difficulties (either of the following):

- Breastfeeding difficulties based on mother's breast conditions

- Non-severe respiratory difficulties, e.g., nasal congestion, interfering with breastfeeding,

No breastfeeding difficulties (either of the following):

- No signs of inadequate feeding
- No additional issues for mother-infant dyad

No breastfeeding

Breastfeeding assessment outcome for the mother:

Breastfeeding difficulties, if ANY indication of the need for support on:

- Re-lactating
- Expressing breast milk and cup-feeding
- Breast conditions, e.g., engorgement; sore and cracked nipples; plugged ducts and mastitis; flat, inverted, large or long nipples; nipple pain; thrush
- Perception of not having enough breast milk
- Other concerns, e.g., lack of confidence, concerns about diet, working away from home

No breastfeeding, if ANY indication of the need for support on:

- Re-lactating
- Meeting the nutritional needs of the infant
- Working away from home
- Delegating infant feeding and care to another

Decide:

INFANT

- **Refer to facility-based nutrition services (FBNS) and community-based nutrition services (CBNS) if:**
 - Normal nutritional status or $WLZ \geq -2$ or < -3 , and
 - No oedema
 - No breastfeeding difficulties
 - No weight loss or failure to gain weight, no drop across WAZ lines
 - Infant alert and well
 - Adequate social circumstances and breastfeeding and IYCF support availability
- **Refer to OPD-SAM if:**
 - The infant has $WLZ < -3$ with:
 - Moderate, mild or possible breastfeeding difficulties, or
 - Moderate weight loss or recent (days-weeks) failure to gain weight, or moderate drop across WAZ lines
 - The infant is alert.
 - Social circumstances are adequate, and breastfeeding and IYCF support is available.
- **Start treatment in IPD-SAM if:**
 - The infant has bilateral pitting oedema, or
 - $WLZ < -3$ with
 - A general danger sign or serious associated disease, or
 - Severe breastfeeding difficulties, or
 - Recent severe weight loss or prolonged (weeks-months) failure to gain weight, or sharp drop across WAZ lines
 - Social circumstances are inadequate and breastfeeding or IYCF support is available.

MOTHER

- Admit to OPD-MAM if MUAC < 230 mm.

- Refer to hospital if bilateral pitting oedema or MUAC < 185 mm or any danger sign.
- Refer to mental health counselling if needed.
- Refer to community-based health and nutrition support and link with community-based initiatives.

Diagnosis and treatment plan for infants < 6 months with acute malnutrition:

Start of treatment

IPD-SAM	OPD-SAM	Continued FBNS and CBNS	FBNS and CBNS
Complicated SAM • Bilateral pitting oedema, or • WLZ < -3 with either or - A general danger sign or serious associated disease - Severe breastfeeding difficulties - Recent severe weight loss, prolonged (weeks-months) failure to gain weight or sharp drop across WAZ lines	Uncomplicated SAM • WLZ < -3 with either or - Moderate, mild or possible breastfeeding difficulties - Moderate weight loss or recent (days-weeks) failure to gain weight, or moderate drop across WAZ lines • Alert	MAM • WLZ ≥ -3 to < -2 <i>Infants with MAM and satisfactory breastfeeding are referred to FBNS and CBNS that includes monthly growth monitoring, infant and young child feeding, maternal nutrition and screening for acute malnutrition</i>	Normal nutrition • WLZ ≥ -3 No bilateral pitting oedema for two weeks • Breastfeeding (or replacement feeding) satisfactory • Weight gain satisfactory (weight curve follows the WAZ line)

5.7. Case Management of Children 6–59 Months of Age in IPD-SAM

STABILISATION

Before the start of any procedure, verify whether the child has **corneal ulceration** that needs immediate attention: Give vitamin A, put chloramphenicol or tetracycline and atropine drops in the eye, cover the eyes with a saline-soaked eye pad and bandage.

Hypoglycaemia

Assess:

- Measure blood glucose if there is any suspicion of hypoglycaemia and blood glucose can be measured quickly. Hypoglycaemia is present when the blood glucose is < 3 mmol/litre (L) or < 54 mg/dl.
- If blood glucose cannot be measured, assume that all children with SAM are hypoglycaemic and give treatment.

Treat:

- Give 50 ml bolus of 10% glucose or sucrose solution (1 rounded teaspoon of sugar in 3 tablespoons of water) orally or by NG tube, followed by the first feed as soon as possible.
- If the child is unconscious, treat with IV 10% glucose at 5 ml/kg followed by 50 ml of 10% glucose or sucrose by NG tube to prevent rebound hypoglycaemia.
 - If IV access cannot be quickly established, give 10% glucose or sucrose solution by NG tube.
 - If IV glucose is not available, give 1 teaspoon of sugar moistened with one or two drops of water sublingually, and repeat every 20 minutes to prevent relapse,
 - Monitor children for early swallowing, which leads to delayed absorption. If present, give another dose of sugar.
- If convulsion persists after giving glucose IV, give rectal diazepam 0.5 mg/kg body weight.
- Start feeding with F75 therapeutic milk every 30 minutes for the first 2 hours, giving $\frac{1}{4}$ of the total amount of the 2-hourly feed; continue with F75 feeds every 2 hours for 24 hours, day and night (see Re-feeding).

- Encourage breastfeeding if appropriate.
- Start broad-spectrum antibiotics (see Infection).
- Keep the child warm: cover the child's head and body, and whenever appropriate apply the kangaroo technique, unless the child has high fever.

Monitor:

- If the initial blood glucose was low, repeat the measurement after 30 minutes.
- If blood glucose falls to < 3 mmol/L (< 54 mg/dl), repeat the 10% glucose or oral sugar solution.
- If rectal temperature falls to < 35.5 °C, or if the level of consciousness deteriorates, repeat the Dextrostix measurement and treat accordingly.

Prevent:

- Feed every 2 hours, starting immediately (see Re-feeding) or, when dehydrated, rehydrate first.
- Continue feeding throughout the night.
- Encourage breastfeeding if appropriate.
- Encourage mothers to watch for any deterioration, help feed and keep the child warm.
- Check for abdominal distension.

Hypothermia

Assess:

- Measure temperature: If the axillary temperature is < 35.0 °C or does not register on a normal thermometer, assume hypothermia; when a low-reading thermometer is available, take the rectal temperature to confirm hypothermia (< 35.5 °C).

Treat:

- Treat all children with hypothermia routinely for hypoglycaemia and infection.
- Start antibiotic treatment.
- Feed the child immediately and then every 2 hours unless he/she has abdominal distension.
- Re-warm the child:
 - Make sure the child is clothed (especially the head) and covered with a warmed blanket and place a heater (not pointing directly at the child) or lamp nearby. Use a heater or

- incandescent lamp with caution. Do not use a hot water bottle or fluorescent lamp.
- Put the small child on the mother's bare chest or abdomen (kangaroo technique).
- Let the mother or carer sleep with the child to keep the child warm in the night.
- Keep the child away from draughts.

Monitor:

- Take the child's rectal temperature every 2 hours until it rises to > 36.5 °C. Take it every 30 minutes if a heater is being used.
- Check for hypoglycaemia whenever hypothermia is found.
- Cover the head of the child with a bonnet. Keep the child covered at all times.

Prevent:

- Treat for hypoglycaemia.
- Start antibiotic treatment.
- Feed the child immediately and then every 2–3 hours, day and night, especially for the first 24–28 hours.
- Keep the child covered with a blanket and a bonnet. Put the small child on the mother's bare chest or abdomen (kangaroo technique) and keep away from draughts.
- Avoid exposing the child to cold (e.g., after bathing or during medical examinations); dry carefully after bathing, but do not bathe if very ill; change wet nappies, clothes and bedding to keep the child and the bed dry.
- Keep the room warm. Maintain room temperature at not less than 27° C.
- Place the child in an adult bed to let the mother or carer sleep with the child to keep the child warm in the night.

Dehydration

Assess and treat:

Dehydration in SAM tends to be over-diagnosed and its severity overestimated in children with SAM because dehydration is difficult to determine accurately from clinical signs alone.

Prevent:

- Give 50–100 ml ReSoMal between feeds after each watery stool to replace stool losses.
- If the child is breastfed, ensure continued and more frequent breastfeeding.

Infection

Treat:

- Give a presumptive treatment of broad-spectrum antibiotic routinely:
 - If the child has **uncomplicated SAM**, give a broad-spectrum antibiotic:
Amoxicillin 40 mg/kg orally two times per day for 5 days, or, if not available,
Cotrimoxazole (trimethoprim 4 mg/kg + sulfamethoxazole 20 mg/kg) orally two times per day for 5 days
 - If the child has **complicated SAM** (hypoglycaemia, hypothermia, lethargic or any other medical complication), give a parenteral antibiotics routinely:
Ampicillin 50 mg/kg IM or IV four times per day (every 6 hours) for 2 days followed by oral Amoxicillin 40 mg/kg orally two times per day (every 12 hours) for 5 days, AND
Gentamicin 7.5 mg/kg IM or IV once a day for 7 days

If the child is not passing urine, gentamicin may accumulate in the body and cause deafness. Do not give a second dose until the child has passed urine.

- If the child **fails to improve clinically by 48 hours or deteriorates by 24 hours** or presents with septic shock or meningitis, use second-line antibiotics targeted at likely causes
- If the child's clinical condition does not improve after 5 days, re-assess the child for infection and potentially resistant organisms and take appropriate measures.
- If there is partial improvement after 5 days, complete a full 10-day course.
- Give measles vaccine if the child is 6 months of age or above and not vaccinated, or was vaccinated 6 months ago; delay vaccination if the child is in shock.

- Give an oral anthelmintic after one week for presumptive treatment.

Children under 12 months of age are never treated presumptively but are treated when infestation has been confirmed.

- Treat other associated infections as appropriate:
 - If meningitis is suspected, do a lumbar puncture for confirmation where possible and treat.
 - If other specific infections (e.g., pneumonia, dysentery, skin or soft-tissue infections) are identified, treat as appropriate.
 - If the child has a positive blood film for malaria parasites or a positive malaria rapid diagnostic test, treat.
 - If tuberculosis (TB) is diagnosed or strongly suspected, treat for TB.
 - Test for HIV infection if HIV is suspected. Give immediate prophylactic treatment with cotrimoxazole against pneumocystis jiroveci pneumonia and other infections and start lifelong antiretroviral therapy (ART) as soon as possible after stabilisation of metabolic complications and sepsis, indicated by return of appetite and resolving severe oedema.

- Treat high fever ($\geq 39.5^{\circ}\text{C}$) or persistent fever:
 - Sponge the child's body with tepid (lukewarm) water.
 - Use paracetamol only if the fever causes the child distress and be cautious of the risk of hepatic damage at normal doses.
Paracetamol 120 mg/5 ml syrup every 6 hours (250 mg tablet replaces 10 ml syrup).
If the child is not responding to paracetamol, do not repeat the dosage. Paracetamol is **not** a routine drug.

Monitor:

- If the child is still anorexic after 7 days of antibiotic treatment, continue for a full 10-day antibiotic course; if anorexia persists, reassess the child fully.

Feeding

- Start feeding immediately. *See separate sheet*

Micronutrient Deficiencies

Vitamin A

- If the child has no eye signs or history of measles, do not give vitamin A because the amounts already present in the therapeutic foods are enough. If the child has **any sign of vitamin A** deficiency such as corneal ulceration or had a recent episode of measles (within the past 3 months), give vitamin A on days 1, 2 and 14.

Folic acid

- Give 5 mg folic acid supplementation on day 1 and 1 mg/day every day when on F75 or F100.

Iron

- Although mild anaemia is common in children with SAM, do not give iron during stabilisation, but wait until good appetite and start of gaining weight because iron can make worsen infections.

Daily Care

Monitor:

- Monitor vital signs every 4 hours, or more often if indicated:
 - Respiratory rate, pulse rate and temperature
 - Daily weight and weight gain
 - Daily 24-hour food intake

- Presence of diarrhoea and other signs of infection
- Monitor and detect any sudden appearance of danger signs:
 - Level of consciousness: Lethargy, decreased consciousness and convulsions
 - Fast or difficult breathing
 - Increase in respiratory rate
 - Weak and fast pulse, increase in pulse rate
 - Sudden (or high) increased or decreased (or low) body temperature
 - Vomiting or acute or persistent diarrhoea
 - Other changes in condition
 - Sudden and/or important weight gain > 5g/kg/day
- Record key parameters on the *Daily Care Card*:
 - Days in hospital, daily weight, weight gain, oedema, diarrhoea
 - Feeding plan and intake
 - Antibiotics intake and other medication and supplementation
- Monitor improvement during stabilisation

The initial treatment during stabilisation ends when the child becomes hungry; this indicates that infections are coming under control, the liver is able to metabolize the diet and oedema and other metabolic abnormalities are improving; if the child's appetite improves, then the treatment is successful and the child is ready to change diet and start recovering lost weight.
- Decide to end stabilisation when:
 - Medical complications start resolving.
 - Oedema starts reducing.
 - Appetite returns.
 - There is no weight gain (or weight loss in case of oedema).
 - The child is awake and increasingly alert.

Involve mothers in care: *See separate sheet.*

TRANSITION

Monitor:

Transition is marked by daily closely monitoring of danger signs and progress.

- Monitor weight gain: In the first days during transition, when the child adapts to the new diet, weight gain should not exceed 5 g/kg/day; excess weight gain is not a good sign during the first days.
- Give presumptive treatment of anthelmintic after 7 days in treatment.
- Examine the child daily and adapt the treatment based on diagnosis.
- Monitor key parameters and record on the *Daily Care Card*.

Improvement during transition:

- Medical complications continue resolving.
- Oedema continues reducing.
- Appetite has returned.
- The child tolerates a high-energy high-protein diet.
- Slow weight gain has started (< 5 g/kg/day) or weight loss continues in case of oedema.
- The child is alert and clinically well.

Danger signs during transition:

- Level of consciousness: Lethargy, decreased consciousness and convulsions
- Breathing: Fast or difficult breathing, increase in respiratory rate ≥ 5 breaths/minute
- Weak and fast pulse, increase in pulse rate ≥ 25 beats/minute
- Sudden increased (or high) or decreased (or low) body temperature
- Vomiting or acute or persistent diarrhoea
- Other changes in condition
- Sudden and/or important weight gain (or weight gain > 5 g/kg/day)
- Signs of rumination

Failure to respond to treatment during transition:

- (Re-)appearance of any danger sign
- Maintaining or increasing oedema or (re-)appearance of oedema
- Weight gain > 5 g/kg/day or loss of weight in the absence of oedema

The child should undergo a full and thorough assessment to identify newly developed or missed conditions or underlying disease and receive prompt treatment based on diagnosis.

REHABILITATION (OPTION 1)

Prepare for referral to OPD-SAM:

The child should meet the following criteria:

- Has appetite restored and eats **at least 75%** of the daily amount of the RUTF diet or **two full meals** of RUTF
- Has medical complications resolving and oedema reducing
- Is alert, smiles, responds to stimuli, is interested in surroundings, sits, crawls, stands or walks depending on age and has a normal body temperature (36.5–37.5° C)
- Has an updated immunization schedule

The mother or carer should meet the following criteria:

- Understands why and how to provide RUTF and understands that this is the main diet until full recovery and that it should not be shared with others
 - Has received counselling on feeding and care practices, support to re-initiate and/or encourage breastfeeding, health and nutrition education and cooking demonstrations
 - Has been taught how to provide sensory stimulation and emotional support to the child
 - Has received psychosocial support and health and nutrition care for herself as needed
 - Understands where and how to continue treatment in OPD-SAM after stabilisation
-
- Give an amount of RUTF to bridge the gap to the follow-up visit in OPD-SAM.
 - Link the mother or carer with the health facility that will follow up the child in OPD-SAM until full recovery and the CHW in the community.
 - Ensure that mothers or carers know how to feed the child with RUTF and to continue treatment at home with weekly OPD-SAM visits for monitoring, counselling and receiving RUTF.
 - Fill a *Referral Slip* with details on the child's health and nutritional status, medical history and treatment received. A system to trace and monitor movement should be in place to ensure that no children are lost between the levels of care.
 - If discharge is not possible, arrange rehabilitation in IPD-SAM until full recovery.
 - Alert the CHW and CHWs of the discharge of the child and the need to continue treatment in the closest OPD-SAM to the home of the child.

REHABILITATION (OPTION 2)

Monitor:

- Weigh the child:
 - With high-energy feeding, most children with SAM will gain weight well and reach their discharge criteria after 2–4 weeks.
 - Weight gain will be about 10–15 g/kg/day and should be above 5g/kg/day; a child who does not gain 5 g/kg/day for 3 consecutive days in this phase of rehabilitation is failing to respond to treatment.
- Monitor vital signs and danger signs as before
- Continue treatment until the child achieves the discharge criteria, MUAC $\geq$ 125 mm or WHZ $\geq$ -2 for 2 days and no oedema for 2 weeks.

Improvement or response to treatment in rehabilitation

includes:

- No medical complications
- No oedema
- Good appetite
- Good weight gain ($> 5\text{g/kg/day}$)
- Alert and well

Failure to respond to treatment in rehabilitation includes:

- Presence of any danger sign
- (Re-)appearance of oedema
- Failure to gain weight of at least 5 g/kg/day, static weight or loss of weight

Prepare for end of treatment and discharge from hospital:

- Check whether the child reaches the end of treatment criteria.
- If the child is absent for 2 consecutive days, record the third missed visit as defaulting, and request a home visit to inquire about the reason for defaulting.
- Verify whether the immunization schedule has been completed.
- Indicate the outcome of the treatment in the *IPD-SAM Register* and on the *IPD-SAM Record*: Date, treatment outcome (cured,

- died, defaulted, non-cured or referred out), end anthropometry, length of stay, weight gain.
- Advise the mother or carer to continue attending monthly FBNS and CBNS and to return to the health facility if a problem occurs or the child's condition deteriorates. Mothers or carers may be taught to monitor the recovering child (and other children at risk from the environment) with a MUAC tape.

Criteria for end of treatment at full recovery:

The child should meet the following criteria:

- MUAC $\geq$ 125 mm (if admitted by MUAC) or WHZ $\geq$ -2 (if admitted by WHZ) on two consecutive measurements (2 consecutive days)
- No oedema for 2 consecutive weeks (if admitted by oedema)
- Alert and well

The mother or carer should meet the following criteria:

- Has received counselling on feeding and care practices, support to re-initiate and/or encourage breastfeeding, health and nutrition education and cooking demonstrations
- Has been taught how to provide sensory stimulation and emotional support to the child
- Has received psychosocial support and health and nutrition care for herself as needed
- Understands where and how to seek treatment in case of deterioration

Organise follow-up after discharge from hospital

5.8. Case Management of Infants Under 6 Months of Age in IPD-SAM

Management of complicated SAM in infants under 6 months of age in IPD-SAM is complementary to the care in IPD-SAM for children 6–59 month of age.

Treat:

- Give routine, preventive and other specific treatment based on diagnosis. Routine, preventive and other specific treatment based on diagnosis of infants weighing 4 kg or more is similar to that for children 6 months of age or older, except, do not give vitamin A, folic acid, anthelmintic or measles vaccination.
- Prevent hypothermia:
 - Encourage breastfeeding immediately and then feed every 2–3 hours, day and night.
 - Keep the infant warm, put on a hat, apply the kangaroo technique, cover the body with a blanket.
 - Place the infant in an adult bed to let the mother sleep with the infant (under impregnated bednets in malaria-infected regions) in a draught-free part of the IPD-SAM ward.
 - Avoid exposing the child to cold, e.g., after bathing or during medical examinations.
 - Dry the infant carefully after bathing, but do not bathe if very ill.
 - Change wet nappies, clothes and bedding to keep the infant and the bed dry.
 - Use a heater or incandescent lamp with caution.
 - Do not use a hot water bottle or fluorescent lamp.
- Prevent hypothermia
- Provide nutrition support as indicated

Prepare for referral to continued support in OPD-SAM:

- Verify whether the infant has reached the following criteria:

- All clinical complications including oedema are resolved.
 - Weight gain on either exclusive breastfeeding or replacement feeding is satisfactory, with the weight curve following the WAZ growth line.
 - The immunization schedule and other routine interventions have been completed
 - The infant has good appetite and is alert and well.
- Advise the mother or carer on for safe feeding at home:
- Mothers or carers who are expected to give replacement feeding to their infants after they are discharged from IPD-SAM need clear guidance on safe preparation and use of replacement feeds. Whenever formula milk is provided as part of management of SAM in infants, it should not confuse or compromise the wider public health message concerning exclusive breastfeeding for infants under 6 months of age. Early introduction of complementary foods for older infants could be considered depending on maturity of swallowing.
- Encourage the mother or carers to attend monthly FBNS and CBNS and advise them to return to the health facility in case of a health problem.

5.9. Treatment Protocols in IPD-SAM

Name of Medication	When to Give	Age - Weight	Dosage
AMOXICILLIN	All children with SAM without medical complication. (<i>first-line antibiotic</i>)	≥ 3 kg	Amoxicillin 40 mg/kg orally two times per day for 5 days (infants < 3 kg: 15 mg/kg)
AMPICILLIN and	All children with SAM with medical complication. (<i>first-line antibiotic</i>)	All ages	Ampicillin 50 mg/kg IV or IM four times per day for 2 days (infants < 3 kg: 50 mg/kg IV three times per day); Switch to ampicillin 25 mg/kg orally four times per day for 5 days (infants < 3 kg: 25 mg/kg three times per day) or amoxicillin 40 mg/kg orally two times per day for 5 days (infants < 3 kg: 15 mg/kg).
GENTAMICIN		All ages	Gentamicin 7.5 mg/kg IV or IM once a day for 7 days (including for infants from 2 nd week of life onwards).
ALBENDAZOLE or MEBENDAZOLE	After 1 week, for presumptive treatment. Immediate, for treatment in case of severe infestation.	≥ 10 kg	Albendazole: 1–2 years: 200 mg, orally once a day for 3 days >2 years: 400 mg, orally once a day for 3 days Mebendazole: 1–2 years: 100 mg, orally once a day for 3 days >2 years: 100 mg, orally two times per day for 3 days
VITAMIN A	If eye signs of vitamin A deficiency or if recent measles (now	All ages	Vitamin A treatment dose once a day on day 1, day 2 and day 14: <6 months: 50,000 IU 6–11 months: 100,000 IU

	or in past 3 months), give treatment dose.		≥12 months: 200,000 IU
	If therapeutic foods do not comply with WHO specifications or if no other daily supplement of vitamin A is given, give preventive dose on admission.	≥ 6 months	Vitamin A preventive single dose: 6–11 months: 100,000 IU ≥12 months: 200,000 IU
10% GLUCOSE 10% SUCROSE (SUGAR WATER*)	For all children for the treatment for hypoglycaemia (low blood glucose, <3 mmol/L) or as preventive dose. (* 10% sucrose or sugar water is obtained by solving 1 teaspoon of sugar in 3 table spoons water)	All ages	<u>If not lethargic or unconscious</u> , give 10% glucose or sucrose 50 ml (infants < 6 months 5 ml/kg or 25 ml) orally or by NG tube; <u>If lethargic or unconscious</u> , give sterile 10% glucose 5 ml/kg IV, followed by 10% glucose or sucrose 50 ml (infants <6 months 25 ml) by NG tube to prevent re-bound hypoglycaemia. If IV fluids will be given for shock, no need to give the NG bolus as glucose is included in the IV fluids.
F75	Immediate start re- feeding based on 100 Kcal or 130 ml /kg/day, followed by	All ages	Feeds every 2 hours See look-up tables, and feeding protocol

	RUTF after the child's appetite returns		
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Supplementation:

- **Folic acid** 5 mg (Infants <6 m: 2.5 mg) on day 1 for all children. Give daily dose folic acid 1 mg during inpatient care if therapeutic foods do not comply with WHO specifications.
- **Iron** 3 mg/kg/day for all children and infants who regained good appetite and start gaining weight (i.e., during transition), except when on RUTF as the daily dose of RUTF will contain sufficient iron (10 mg iron and 210 µg folic acid per 100 g RUTF or 500 Kcal). Example: crush 200 mg ferrous sulphate tablet in 2–2.4 litre F-100 or F-100 Diluted.
- **Zinc** is not given routinely or in case of diarrhoea, as the daily dose of therapeutic food will contain sufficient zinc.

Vaccination (or link with EPI service):

- **Measles vaccination:** Give all children ≥6 months of age a measles vaccination upon admission, and a second vaccination after 4 weeks or before discharge. If the child is <9 months of age at discharge, make an appointment to receive a repeat vaccination after the age of 12 months.
- **Update all vaccinations** according to the national immunization schedule.

Other preventive actions:

- Keep the child warm, apply kangaroo technique if needed, put hat, use adult cots for sleeping with mother and warm the ward. Use impregnated bednets in malaria endemic areas.

Treatment Protocols IPD-SAM (continued)

Name of Medication	When to Give	Dosage
CEFTRIAXONE	IF no improvement with first-line antibiotic after 48 hours. (<i>second-line antibiotic</i>)	Ceftriaxone 100 mg/kg IV or IM once a day for 5 days (Infants < 3 kg: 50 mg/kg)
CLOXACILLIN	IF no improvement with first-line antibiotic after 48 hours and IF suspected staphylococcal infections.	Cloxacillin 25-50 mg/kg/dose IV (or IM or orally) every 6 hours for 5 days (Infants < 3 kg: 25-50 mg/kg every 8 hours)
CIPROFLOXACIN	(<i>Example of third-line antibiotic</i>) (Do only give to infants <3 kg in case of life saving measure)	Ciprofloxacin 10 mg/kg/dose IV every 8 hours for 5 days, or 15 mg/kg/dose orally every 12 hours for 5 days
RESOMAL	For oral treatment of dehydration (diarrhoea and recent sunken eyes) without shock given in prescribed amounts. Monitor danger signs every 30 minutes. After rehydration given as maintenance fluid in prescribed amounts after each loose stool.	<u>Treatment fluid</u> : 5 ml/kg/30 minutes orally or by NG tube in first 1–2 hours, then alternate every hour 5–10 ml/kg with every other hour F-75 for 10 hours, or until minimum two signs of hydration appear; <u>Maintenance fluid</u> : if wasted give 15–30 ml/kg per loose stool (infants < 2 years 50-100 ml, ≥2 years 100-200 ml)
IV FLUID: Half-strength Darrow's with 5% dextrose, or Ringer's lactate with 5% dextrose**	For IV treatment of shock with lethargy or unconsciousness. Monitor danger signs every 10 minutes. (If no Darrow's or Ringer's, use half-normal saline (0.45% NaCl) with 5% dextrose**)(**Add sterile potassium chloride 20 mmol/L to the solution)	<u>Treatment fluid</u> : 15 ml/kg/hour for 1st hour, reassess the child, and continue 2 nd hour if the child has improved; <u>Maintenance fluid</u> : 4 ml/kg/hour.

OXYGEN	For treatment of pneumonia, respiratory distress, shock.	Oxygen 1–2 litres per minute.
BLOOD TRANSFUSION (and FUROSEMIDE)	For treatment of septic shock after failure to respond after 1 hour rehydration, and of very severe anaemia. Monitor danger signs every 10 minutes.	Safe fresh whole blood 10 ml/kg given slowly over 3 hours, and furosemide 1 ml/kg IV. (If signs of heart failure, give 7 ml/kg packed blood cells instead and consider giving digoxin.)
TETRACYCLINE EYE OINTMENT <i>or</i> CHLORAMPHENICOL EYE DROPS	For treatment of eye infections. Wash hands before and after application.	Tetracycline 1 drop every 8 hours, or chloramphenicol 1 drop every 6 hours, until two days after condition has resolved.
ATROPINE 1%	For corneal ulceration, to relieve pain as pupil dilatation stops ciliary muscle spasms.	Atropine 1% 1 drop every 8 hours (morning, afternoon and before sleep).
NYSTATIN	For treatment of candidiasis. Use dropper and show mother how to use it.	Nystatin 100,000 units (1 ml) every 6 hours after food for 7 days.
BENZYL BENZOATE	For topical treatment of scabies. Avoid eye contact; do not use on broken or secondary infected skin.	Benzyl benzoate to apply over whole body; repeat without bathing on following day; wash off 24 hours later.
WHITFIELDS	For topical treatment of ringworm, taenia or fungal infections of the skin.	Whitfields to apply two times per day, until condition has resolved.
GENTIAN VIOLET	For topical treatment of minor abrasions or fungal infections of the skin.	Gentian violet to apply once a day until condition has resolved.
1% POTASSIUM PERMANGANATE	For topical treatment of dermatosis. To make a 1% solution, dissolve a crystal in enough water so that the colour is slightly purple and still transparent.	1% potassium permanganate to daily bathe for 10–15 minutes; sponge the solution onto affected areas while the child is sitting in a basin.

ANTI-MALARIAL	For treatment of malaria in case of SAM, do not use Quinine. Iron and folic acid should never be provided together with a malaria treatment; malaria is treated first.	See national guidelines.
PYRIDOXINE SUPPLEMENTATION	For treatment of tuberculosis with isoniazid treatment, give pyridoxine supplement.	Pyridoxine supplementation 5-10 mg single daily dose.
ANTI-RETROVIRAL THERAPY (ART) and COTRIMOXAZOLE	For treatment of HIV infection, start (or continue) ART and cotrimoxazole in addition to the antibiotic treatment for SAM. See national guidelines.	Cotrimoxazole (sulphamethoxazole 40 mg/kg and trimethoprim 8 mg/kg) orally three times per day, plus ART.

NOTE: Medicine protocols for treating other infections and infestations that are not listed, refer to national guidelines.

5.10. Drug Dosages in IPD-SAM

Dosage of broad-spectrum antibiotic treatment for uncomplicated SAM (Use one)

Drug and dosage	Dose according to body weight			
	3–< 6 kg	6–< 10 kg	10–< 15 kg	15–< 20 kg
Amoxicillin 40 mg/kg orally two times per day for 5 days				
Tablet 250 mg	1	1 ^{1/2}	2	3
Syrup 250 mg/5 ml	2.5 ml	7.5 ml	10 ml	-
Cotrimoxazole (trimethoprim 4 mg/kg + sulfamethoxazole 20 mg/kg) orally two times per day for 5 days				
Adult tablet (T 80 mg + S 400 mg)	1/4	1/2	1	1
Paediatric tablet (T 20 mg + S 100 mg)	1	2	3	3
Suspension (T 40 mg + S 200 mg/5 ml)	2 ml	3.5 ml	6 ml	8.5 ml

Dosage of broad-spectrum antibiotic treatment for complicated SAM (Use all):

Drug and dosage*	Dose according to body weight			
	3–< 6 kg	6–< 10 kg	10–< 15 kg	15–< 20 kg
Ampicillin 15 mg/kg IM or IV four times per day on days 1 and 2 (2 first days)				
Vial 500 mg mixed with 2.1 ml sterile water to give 500 mg/2.5 ml	1 ml	2 ml	3 ml	5 ml
Amoxicillin 40 mg/kg orally two times per day on days 2 to 7 (5 days)				

250 mg tablet	1	1 ^{1/2}	2	3
Syrup (containing 250 mg/5 ml)	2.5 ml	7.5 ml	10 ml	-
Gentamicin 7.5 mg/kg IM or IV once a day on days 1 to 7 (7 days)				
Vial containing 20 mg (2 ml at 10 mg/ml) undiluted	2.25–3.75 ml	4.5–6.75 ml	7.5–10.5 ml	–
Vial containing 80 mg (2 ml at 40 mg/ml) mixed with 6 ml sterile water	2.25–3.75 ml	4.5–6.75 ml	7.5–10.5 ml	–
Vial containing 80 mg (2 ml at 40 mg/ml) undiluted	0.5–0.9 ml	1.1–1.7 ml	1.9–2.6 ml	2.8–3.5 ml

**Calculate the exact dose based on body weight and use the doses above only when this is not possible; all three are being given.*

Dosage of routine anthelmintic after one week of start of treatment in IPD-SAM:

Drug*	Age	Dose	Prescription
Mebendazole	24 months and older	100 mg	Orally two times per day for 3 days
Albendazole	12–23 months	200 mg	Single dose
	24 months and older	400 mg	
Pyrantel pamoate	12 months and older	10 mg/kg	

** Use only one of the anthelmintic.*

Dosage of paracetamol by body weight for children with high fever and distress:

Drug and dosage	Dose according to body weight				
	3–< 6 kg	6–< 10 kg	10–< 12 kg	12– < 15 kg	15–< 20 kg
Paracetamol 10–15 mg/kg up to four times per day					
Syrup (containing 120 mg/5 ml)	2 ml	2.5 ml	5 ml	7.5 ml	10 ml
Tablet 250 mg	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1

Dosage of vitamin A if signs of vitamin A deficiency on days 1, 2 and 14:

Age	< 6 months	6–12 months	> 1 year
Weight	3–< 6 kg	6–< 10 kg	10–29 kg
Vitamin A dosage	50,000 IU	100,000 IU	200,000 IU

5.11. Use of ReSoMal in IPD-SAM

Rehydration Solution for Malnutrition (ReSoMal) is a powder for the preparation of an oral rehydration solution used for the oral or nasogastric rehydration of people suffering from SAM. It is exclusively provided under medical supervision in inpatient care and is never given for free use to the mother or carer. The standard WHO ORS solution has a high sodium and low potassium content, which is not suitable for children with SAM unless they have cholera or profuse watery diarrhoea.

ReSoMal specifications:

Per 1 L constituent	Amount
Sodium	45 mmol
Chloride	70 mmol
Potassium	40 mmol
Citrate	7 mmol
Glucose	55 mmol
Saccharose	73 mmol
Magnesium	3 mmol
Zinc	300 µmol
Copper	4 µmol
Osmolarity	294 mmol/L

Standard and Low Osmolarity ORS, and ReSoMal specifications compared:

	Standard Osmolarity ORS	Low-Osmolarity ORS	ReSoMal
Per 1 L constituent	Amount	Amount	Amount
Sodium	90 mmol	75 mmol	45 mmol
Chloride	80 mmol	65 mmol	70 mmol
Potassium	20 mmol	20 mmol	40 mmol
Citrate	10 mmol	10 mmol	7 mmol
Glucose/Saccharose	111 mmol	75 mmol	125 mmol
Osmolarity	251 mmol/L	245 mmol/L	294 mmol/L

ReSoMal recipes:

ReSoMal can be bought commercially as a combined mineral and vitamin mix (CMV) for SAM or prepared from WHO standard or low osmolarity oral rehydration solution (ORS).

To prepare ReSoMal from commercial sachets:

- Add one sachet of 84 g to 2 litres water and mix.

To prepare ReSoMal from the WHO-recommended standard or low osmolarity ORS:

- Add to one litre sachet of ORS 1 red scoop or 6.35 g commercial CMV (or 40 ml electrolyte-mineral solution, 50 g or 40 g sugar and cooled boiled water up to 2 L solution.

ReSoMal recipes from standard and low osmolarity ORS:

Ingredient	Amount	Ingredient	Amount
Standard WHO ORS	1 L sachet	Low Osmolarity WHO ORS	1 L sachet
CMV	1 red scoop (6.35 g)	CMV	1 red scoop (6.35 g)
Sugar	50 g	Sugar	40 g
Water	Up to 2 L	Water	Up to 2 L

Electrolyte-mineral solution for 2500 ml:

	Quantity (g)	Molar content of 20 ml
Potassium chloride	224	24 mmol
Tripotassium citrate	81	2 mmol
Magnesium chloride	76	3 mmol
Zinc acetate	8.2	300 µmol
Copper sulphate	1.4	45 µmol
Water: make up to	2500 ml	-

5.12. Management of Childhood TB with SAM

Most children with TB have pulmonary TB (intrathoracic lymphadenopathy). The likelihood of progression from TB infection to disease is more in case of children, and the more so when children are of a younger age, have malnutrition, HIV infection or measles.

It is important that children be diagnosed early on. The diagnosis of TB in children depends upon a careful clinical history, clinical examination and relevant investigations, e.g., Mantoux test or Tuberculin skin test (TST), chest X-ray (CXR), and sputum smear microscopy. Sputum examination may not be possible in young children because children usually cannot produce a sputum sample. Bacteriological confirmation of TB is not always feasible, but it should be sought whenever possible. The following is recommended in the *2010 National Tuberculosis Guidelines* [1] and the *WHO 2014 Guidance on the Management of Tuberculosis in Children* [2].

Diagnose:

Presence of three or more of the following should strongly suggest a diagnosis of TB in a child:

- Chronic symptoms suggestive of TB
- Physical signs highly suggestive of TB
- A positive tuberculin skin test
- Chest X-ray suggestive of TB

Symptoms

In most cases, children with symptomatic TB develop chronic symptoms. The commonest are:

- Chronic cough: An unremitting cough that is not improving and present for more than 21 days.
- Fever: Body temperature of $> 38^{\circ}\text{C}$ for 14 days, after common causes such as malaria or pneumonia have been excluded.
- Weight loss or failure to thrive. In addition to asking about weight loss or failure to thrive, it is necessary to look at the child's growth chart and assess acute malnutrition.

Physical signs highly suggestive of extra-pulmonary TB

- Gibbus, especially of recent onset (resulting from vertebral TB)
- Non-painful enlarged cervical lymphadenopathy with fistula

formation

Physical signs requiring investigation to exclude extra-pulmonary TB

- Meningitis not responding to antibiotic treatment, with a subacute onset or raised intracranial pressure
- Pleural effusion
- Pericardial effusion
- Distended abdomen with ascites
- Non-painful enlarged lymph nodes without fistula formation
- Non-painful enlarged joint
- Signs of tuberculin hypersensitivity (e.g. phlyctenular conjunctivitis, erythema nodosum).

Tuberculin skin test

The test should be standardized using either 5 tuberculin units (TU) of tuberculin purified protein derivative (PPD)-S or 2 TU of tuberculin PPD RT23, as these give similar reactions in TB-infected children. Health-care workers must be trained in performing and reading a TST. A TST should be regarded as positive as follows:

- In high-risk children (includes HIV-infected children and severely malnourished children, i.e. those with clinical evidence of marasmus or kwashiorkor): >5 mm diameter of induration
- In all other children (whether they have received a BCG vaccination or not): >10 mm diameter of induration.

Chest X-ray

The commonest picture on a chest x-ray is that of persistent opacification in the lung together with enlarged hilar or subcarinal lymph glands. A miliary pattern of opacification in HIV-uninfected children is highly suggestive of TB. Patients with persistent opacification, which does not improve after a course of antibiotics, should be investigated for TB.

Common forms of extra-pulmonary TB in children:

Site	Practical approach to diagnosis
Peripheral lymph t (especially cervical)	Lymph node biopsy or fine needle aspiration
Miliary TB (e.g. disseminated)	Chest radiograph and lumbar puncture (to test for meningitis)

Tuberculous meningitis	Lumbar puncture (and imaging where available)
Pleural effusion (older children and adolescents)	Chest radiograph, pleural tap for biochemical analysis (protein and glucose concentrations), cell count and culture
Abdominal TB (e.g. peritoneal)	Abdominal ultrasound and ascitic tap
Osteoarticular	Radiograph of joint/bone, joint tap or synovial biopsy
Pericardial TB	Ultrasound and pericardial tap

Note: All fluid (cerebrospinal fluid, pleural, ascetic, joint or pericardial) must be subjected to biochemical analysis (protein and glucose concentrations), cell count, AFB stain and culture whenever possible.

Treat:

The decision on the drug regimen for a child with TB should be made by an experienced clinician.

Give pyridoxine supplementation (vitamin B6) 5–10 mg daily with the isoniazid treatment (Isoniazid may cause symptomatic pyridoxine deficiency, particularly in children with SAM and HIV-positive children on highly active antiretroviral therapy).

Recommended treatment regimens for new cases of TB in children:

TB diagnostic category	Anti-TB drug regimens	
	Intensive phase 2 months	Continuation phase 4 months

<i>Low HIV prevalence (and HIV-negative children) and low isoniazid resistance settings</i>		
Smear-negative pulmonary TB		
Intrathoracic lymph node TB	2HRZ	4HR
Tuberculous peripheral lymphadenitis		
Extensive pulmonary disease		
Smear-positive pulmonary TB		
Severe forms of extrapulmonary TB (other than tuberculous meningitis/osteoarticular TB)	2HRZ	4HR

<i>High HIV prevalence or high isoniazid resistance settings or both</i>		
Smear-positive pulmonary TB		
Smear-negative pulmonary TB with or without extensive parenchymal disease	2HRZE	4HR

All forms of extrapulmonary TB except
tuberculous meningitis and
osteoarticular TB

All regions

Tuberculous meningitis and	2HRZE	10HR
osteoarticular TB		
Multiple drug resistant TB	Individualized regimens	

E= Ethambutol, H= isoniazid, R= rifampicin, Z= pyrazinamide

Recommended daily doses of first-line anti-TB drugs for children:

Anti-TB drug	Dose and range* (mg/kg body weight)	Maximum dose (mg)
Isoniazid (H)	10 (7-15)	300
Rifampicin (R)	15 (10-20) 600	600
Pyrazinamide (Z)	35 (30-40)	–
Ethambutol (E)	20 (15–25)	–

**The higher end of the range for isoniazid dose applies to younger children; as the children grow older, the lower end of the dosing range becomes more appropriate.*

References:

1. Islamic Republic of Afghanistan Ministry of Public Health General Directorate of Health Service Provision Directorate of Communicable Disease Control National Tuberculosis Control Program. National guidelines for tuberculosis control program in Afghanistan. Kabul: MOPH; 2010.
2. World Health Organization. Guidance for national tuberculosis programmes on the management of tuberculosis in children. World Health Organization; 2014.
3. World Health Organization. WHO guidelines on hand hygiene in health care. Geneva: WHO; 2009.

5.13. Feeding Protocol of Children 6–59 Months of Age in IPD-SAM

STABILISATION

Initiation of re-feeding should be gradual:

- Give F75 diet, 130 ml/kg/day that provides 100 Kcal/kg/day during the initial phase of stabilisation.
- Give F75 frequently (every 2–3 hours, day and night—2–8 feeds per 24 hours) and in small amounts to avoid overloading the intestine, liver and kidneys.
- Ensure and support continued breastfeeding and give support to re-establish breastfeeding.
- Use body weight on admission (or body weight after rehydration in case of dehydration) throughout the initial phase of treatment to determine the daily amount of the F75 diet.
- Feed the child from a cup.
- Use a spoon, dropper or syringe to feed very weak children. Never use feeding bottles, even for very young infants, as they are an important source of infection.
- Feed children who are unwilling to eat by NG tube only (see NG feeding below).
- Do not use IV fluids unless indicated.
- If vomiting occurs, reduce both the amount given at each feed and the interval between feeds.
- Maintain the volume of F75 at 130 ml/kg/day but gradually decrease the frequency of feeding and increase the volume of each feed until the child feeds every 4 hours (6 feeds per 24 hours).
- Discard any therapeutic milk not taken by the child; never reuse it for the next or later feed.
- Give the child at least 80 Kcal/kg/day, but never more than 100 Kcal/kg/day.
 - If the child is given less than 80 Kcal/kg/day, the tissues will continue to break down and the child will deteriorate. If the child is given more than 100 Kcal/kg/day, the child may develop a serious metabolic imbalance.

- In very hot weather, encourage the mother to increase the number of breastfeeds.
- Advise the mother or carer not to eat meals beside the child; sharing the carer's meal with the child can be very dangerous for the child in the initial phase of stabilisation.

Look-up tables for therapeutic feeding with F75, **see Appendix 7**.

Therapeutic milk feeding schedule:

- Preferably, give therapeutic milk 8 times per 24 hours, or every 3 hours.

The risk of hypoglycaemia during stabilisation is reduced if the child receives the full amount of the prescribed milk in 8 feeds over 24 hours. In some circumstances, due to staffing shortages during the evening or night shift, the child will be given the amount of milk spread over fewer feeds. The reduced schedule should not be used routinely during stabilisation.

Breastfeeding support:

- Continue breastfeeding; re-establish re-lactation with the supplemental suckling technique .

Nasogastric feeding:

Only feed the child using a NG tube when the child does not take sufficient diet by mouth during the first few days of treatment. Common reasons for NG feeding include very poor appetite, weakness and painful stomatitis. End NG feeding as soon as possible.

Criteria for nasogastric feeding:

- Anorexia, taking less than 80% of prescribed daily need
- Repeated vomiting
- Severe dehydration or severe pneumonia but conscious
- Too weak to drink
- Painful mouth, throat, or physical disability
- Lethargy or unconsciousness without shock

Procedures for nasogastric feeding:

- At each feed, offer the child the diet orally; after the child has taken as much as he/she wants, give the remainder by NG tube.

- Remove the NG tube when the child is taking 80% of the day's diet orally or two consecutive feeds fully by mouth.
- If over the next 24 hours the child fails to take 80 Kcal/kg, reinsert the tube.
- If the child develops abdominal distension during NG feeding, give 50% magnesium sulfate solution 2 ml IM.
- Always aspirate the NG tube before administering fluids; fix the tube properly so that it cannot move to the lungs during feeding.
- Experienced staff should carry out the NG feeding.
- A child who is being fed by NG tube is not considered ready to transition to rehabilitation.

Record 24-hour therapeutic milk intake:

Record the feeding plan and detailed food intake to monitor the amounts of feed offered, left, taken orally, taken by NG tube, and vomited, as well as presence of watery diarrhoea, on the *Daily Care Card*:

- After each feed, accurately record the amounts of F75 offered and taken and the date and time on the *Daily Care Card*.
- If the child vomits, estimate the amount lost in relation to the size of the feed (e.g., a whole feed, half a feed) and deduct it from the total intake.
- Once a day, determine the energy intake for the past 24 hours and compare it with the child's weight.

MILK OR LACTOSE INTOLERANCE is unusual in children with SAM.

Intolerance should be investigated only if children have copious watery diarrhoea promptly after milk-based feeds are begun and the diarrhoea clearly improves when milk intake is reduced or stopped and recurs when milk is given again. Other signs of milk intolerance include acidic faeces (pH 5.0) and the presence of increased levels of reducing substances in the faeces. In such cases, partially or totally replace the milk with fermented milk or yoghurt or a commercial lactose-free formula. Before the child is discharged, give milk-based feeds again to determine whether the intolerance has resolved. **Annex 3** discusses milk or lactose intolerance and osmotic and persistent diarrhoea.

TRANSITION

RUTF diet (Option 1)

- Introduce RUTF providing 135 to 150 Kcal/kg/day with 2-4 g protein/kg/day:
 - Offer RUTF at each feed until the child takes the fully required amount as tolerated and prescribed for transition (at least 135 Kcal/kg/day and not more than 150 Kcal/kg/day).
 - If the child does not take the prescribed amount of RUTF, top it up with F75 (or F100) to meet the need for 135 Kcal/kg/day.
 - If the child refuses to take the RUTF, give F75 (or F100 in the same volumes), but offer RUTF first until the child takes the appropriate amount to meet the daily energy needs.
- Explain to the mother or carer how to give the RUTF and offer drinking water freely.
- Give the same number of feeds with the same timing as during stabilisation, e.g., feed the child every 4 hours, day and night, or 6 feeds per 24 hours.

Omit the night-time feeds to allow the child longer undisturbed periods when the child is no longer at risk of developing hypothermia or hypoglycaemia; it is also less tiring for those caring for the child.

Encourage a good attitude in those feeding the child, as this is crucial to success. The mother or carer should spend sufficient time with the child to enable him/her to finish each feed and actively encourage the child to eat RUTF while sitting comfortably on the mother's or carer's lap. Children should never be left alone to 'take what they want'.

- Continue to support or re-establish breastfeeding.
- Do not supplement iron and folic acid when children are on RUTF, as the daily dose of RUTF contains sufficient iron (10–14 mg/100g RUTF) and folic acid (210 µg/100g RUTF).
- Do not mix RUTF and F75/F100 or water together into a single food to avoid the risk of bacterial proliferation.
- Record the amounts of feed offered and taken on the *Daily Care Card*.
- As soon as the child is eating well, the volume of the feeds should increase and the child should be prepared for discharge from hospital.

- **Prepare for referral to OPD-SAM:**

F100 diet (if RUTF is not available or possible) (Option 2)

- Give F100 every 4 hours in the same amounts and frequency as the F75 diet was given.
- After 2 days of weight gain on F100, give iron 3 mg/kg/day twice a day.
- Continue 1 mg/day folic acid supplementation throughout.
- Discard any therapeutic milk the child does not take and never reuse it for the next feed.
- Record the amounts of each feed offered and taken.

Look-up tables for volumes of RUTF and F100 feeding during transition, see **Appendices 6 and 8**.

REHABILITATION (OPTION 2)

F100 Diet:

- Continue as in transition **F100 diet** in the same volume as the amount of F75 and gradually increase amounts up to 220 Kcal/kg/day as tolerated. If intake is below 130 Kcal/kg/day, the child will not catch up lost weight and will fail to respond.
- Increase the amount of F100 diet given at each feed by 10 ml (e.g., if the first feed was 60 ml, the second should be 70 ml, the third 80 ml, and so on) until the child refuses to finish the feed.
 - When a feed is not finished, offer the same amount at the next feed; if that feed is finished, increase the amount offered for the following feed by 10 ml; continue this process until some food is left after most feeds.
 - Discard any therapeutic milk not taken and never reuse it for the next feed.
- Record the amounts of each feed offered and taken on the *Daily Care Card*.
- Ensure continued breastfeeding if appropriate.
- Give 1 mg/day folic acid supplementation and iron 3 mg/kg/day twice a day.

Look-up table for volumes of F100 feeding during rehabilitation, see **Appendix 8**.

Introduce solid foods:

For most children, especially for those who want a mixed diet, it is appropriate to introduce solid food gradually after 1–3 days, as tolerated. Most traditional mixed diets have much lower energy content than F100. They are also relatively deficient in various vitamins and minerals, particularly potassium and magnesium, and contain substances that inhibit the absorption of zinc, copper and iron. Thus, local foods should be fortified to increase their content of energy, minerals and vitamins. Oil should be added to increase the energy content, and the mineral and vitamin mixes should be added after cooking. Other ingredients, such as dried skimmed milk, may be added to increase the protein and mineral content. The energy content of mixed diets should be at least 1 Kcal/g.

To avoid the effects of food interaction, which reduce the absorption of minerals, F100 should be given between feeds of the mixed diet. For example, if the mixed diet is given three times per day, F100 should also be given three times per day, making six feeds a day. Water should be offered systematically to smaller children; water intake is not a problem in older children as they will ask for it when thirsty.

Cautious feeding of children 6–59 months of age during stabilisation in IPD-SAM

Essential features of re-feeding:

- 100 Kcal/kg/day of starter formula F75 that has low osmolarity, lactose and sodium and about 1 g protein/kg/day.
- Frequent oral small feeds every 2–3 hours of 130 ml/kg/day in case of severe wasting or 100 ml/kg/day in case of severe oedema, or nasogastric feeds if oral feeding is impaired (parenteral preparations are never used).
- If the child is breastfed, breastfeeding is supported and continues but the full-prescribed amounts of F75 should be taken daily:

Days	Frequency	Volume/kg/feed	Volume/kg/day
1–2	Every 2 hours	11 ml	130 ml
3–5	Every 3 hours	16 ml	130 ml
6 onward	Every 4 hours	22 ml	130 ml

The F75 formula and feeding schedules are designed to meet these targets and look-up tables are available (**Appendix 7**). Milk-based formulas such as starter F75 are satisfactory for most children. Because cereal-based F75 partially replaces sugar with cereal flour, its lower osmolarity may benefit some children with persistent diarrhoea.

Feeding of children 6–59 months of age during transition in IPD-SAM:

Once the child is stabilized—i.e., regain of appetite and oedema is reducing—he/she is ready to change diet for catch-up growth. The F75 milk is replaced by RUTF (*Option 1*) or, if RUTF is not available, by F100 (*Option 2*). Look-up tables for RUTF are available in **Appendix 6** (and for F100 in **Appendices 8**).

Essential features of feeding during transition:

- 135–150 Kcal/kg/day of therapeutic food with 2–4 g protein/kg/day, or about 25–28 g of RUTF/kg/day
- If the child does not complete the prescribed amount of RUTF, feeds should be topped up with F75 (or F100)*. RUTF should always be offered first, with plenty of drinking water given.
- If feeding with RUTF is not feasible, the child should be given a full F100 diet in the same amounts and same frequency as F75 at the end of stabilisation.
- If the child is breastfed, breastfeeding should continue.

* Calorie value of RUTF: 25 g RUTF (135 Kcal) = 180 ml F75 = 135 ml F100

20 g RUTF (108 Kcal) = 144 ml F75 = 108 ml F100
18 g RUTF (1/5 of sachet) (100 Kcal) = 133 ml F75 = 100 ml F100

Feeding of children 6–59 months of age during rehabilitation on F100 (Option 2)

Once the child tolerates the feeding regimen during transition—i.e., change of diet to F100 and increasing volumes—he/she is ready for rehabilitation (*Option 2*: Early discharge from hospital and treatment in OPD-SAM care is not feasible or possible). Look-up tables for F100 are available in **Appendix 8**.

Essential features of feeding during rehabilitation:

- 150–220 Kcal/kg/day with 4–6 g protein/kg/day
- Frequent feeds of F100 with added daily iron 3 mg/kg/day and continued folic acid 1 mg/kg/day
- Allow to eat catch-up diet freely until full recovery
- If the child is breastfed, breastfeeding continues and is supported
- Gradual introduction of family foods, but with the prescribed amounts of F100 taken first

5.14. Alternative Therapeutic Milk Recipes

Recipes for F75 and F100:

F75 FORMULA						
Type of milk	Milk (g)	Sugar (g)	Oil (g)	Cereal powder* (g)	CMV red scoop (6.35 g)	Water (ml)
Dry skim milk	50	140	54	70	1	Add cooled boiled water up to 2,000 ml
Dry whole milk	70	140	40	70	1	
Fresh cow milk	560	130	40	70	1	
Fresh goat milk	560	130	40	80	1	
* Cereal powder is cooked for about 10 minutes before the other ingredients are added.						
F100 FORMULA						
Type of milk	Milk (g)	Sugar (g)	Oil (g)	Cereal powder* (g)	CMV red scoop (6.35 g)	Water (ml)
Dry skim milk	160	100	120	/	1	Add cooled boiled water up to 2,000 ml
Dry whole milk	220	100	60	/	1	
Fresh cow milk	1,800	100	50	/	1	
Fresh goat milk	1,800	100	60	/	1	

To prepare F75 or F100, or look on the tin:

- Add the milk, sugar, pre-boiled cereal powder and oil to one litre (L) water and mix
- Boil for 5-to-7 minutes and allow to cool
- Add the combined mineral and vitamin mix (CMV) designed for SAM (or if not available, add another commercial vitamin and mineral mix) and mix again
- Make up the volume to 2,000 millilitres (ml) with cooled boiled water

Home-Modified Cow Milk for Replacement Feeding for Non-Breastfeeding Infants:

Modifying animal milk for feeding non-breastfeeding infants under 6 months raises difficult technical challenges. First, the currently recommended recipe would need **increasing the essential fatty acid content**. This involves adding daily small amounts of seven vegetable oils in quantities that would need to be adjusted to their essential fatty acid composition and to the child's weight. The feasibility of this approach has never been tested in the field. Second, the present recommendation of **adding a mineral and vitamin mix** to the recipe has not proved feasible to implement in practice. Giving a mineral and vitamin supplement once a day to the child as a drug or mixed with a milk feed might be possible, although the safety of this approach would be a concern if the supplement contains iron.

In view of both the technical difficulties of formulating and preparing a nutritionally adequate recipe for home-modified animal milk and the lack of data on the safety of this milk for replacement feeding of infants under 6 months of age, **home-modified animal milk should not be recommended** as a feasible and safe long-term replacement feeding option. Only in situations where access to commercial infant formula has been temporarily interrupted, it could be considered for short-term feeding. Ideally, a daily vitamin mineral supplement that does not contain iron should be added.

Recipes for Infant Feeding with Fresh Cow Milk:

Quantity of fresh cow milk (ml)	Added water (ml)	Added sugar (g)	Amount of prepared formula (ml)
40	20	4	60
60	30	6	90
80	40	8	120
100	50	10	150

5.15. Feeding Protocol of Breastfeeding Infants Under 6 Months of Age in IPD-SAM

Infants with SAM with the prospect of breastfeeding should receive all support needed for the mother or carer to re-establish breastfeeding, and are given a supplement through supplementary suckling until full recovery.

- Provide nutritional support for breastfeeding infants:

Feeding approaches should prioritise establishing or re-establishing effective exclusive breastfeeding by the mother or other carer. If the infant is not breastfed, give support to the mother or female carer to re-lactate.

During the period that exclusive breastfeeding does not provide enough breast milk for the infant to gain weight appropriately, support re-lactation and stimulate it by the **supplemental suckling** technique (SST) with a milk supplement. If the SST is not working or skilled staff is not available, support the mother to express breast milk by hand and feed the infant using a cup.

- Supplement infants without oedema with expressed breast milk, a generic infant formula or F100-Diluted. F100-Diluted provides 75 Kcal/100 ml but has a lower osmolarity than F75 with a better carbohydrate-to-lipid ratio and thus is better adapted to immature organ functions.
 - Supplement infants with oedema with expressed breast milk or F75 until the oedema has resolved. Undiluted F100 should never be given to infants under 6 months of age with SAM because of high renal solute load and risk of hyponatraemic dehydration.
- Encourage and support the following:
 - Breastfeed on demand or offer breast milk at least every 3 hours for at least 20 minutes (more if the infant cries or demands more). The infant should be breastfed as frequently as possible.
 - Between ½ hour and 1 hour after a normal breastfeeding session, give maintenance amounts of a milk supplement at

130 ml/kg/day—by SST, nasogastric (NG) tube or cup, distributed across eight feeds per day providing 100 Kcal/kg/day. Every two hours feeding can be followed if the infant is having problems taking the milk.

Look-up tables of F100-Diluted and F75 for use in infants < 6 months are provided in **Appendix 9**.

Regulation of the amount of milk feeds:

- Monitor the progress of the infant by daily weighing.
If the infant loses weight or has a static weight over 3 consecutive days but continues to be hungry and is taking all the milk, progressively add 5 ml extra to each feed.
- Weigh the infant daily with a scale graduated to within 10–20 g.
In general, do not increase the quantity of milk supplementation during the stay, because the adequacy of the breastfeeding should improve.

If the infant starts gaining weight, gradually decrease the milk supplement by one-third of the maintenance intake so that the infant is stimulated to take more breast milk.

If the weight gain is sufficient and maintained for 2–3 days (after gradual decrease of the milk supplement), stop the milk supplement.

If the weight gain is not maintained, re-increase the amount of milk supplement to 75% of the maintenance amount for 2–3 days, then gradually decrease the amount again if the infant starts gaining weight.

5.16. Feeding Protocol of Non-Breastfeeding Infants Under 6 Months of Age in IPD-SAM

Infants with SAM without the prospect of accessing safe breast milk, should be given appropriate replacement feeding. Infants with SAM without oedema should be fed with a generic infant formula (or F100-Diluted) in a controlled and safe environment. Infants with oedema should be fed with a generic infant formula (or F75 until the oedema has resolved and then switch to F100-Diluted).

Feeding during stabilisation:

- Give generic infant formula milk or F100-Diluted or F75 (in case of oedema) at 130 ml/kg/day, distributed across eight feeds per day (every 3 hours feeding) providing 100 Kcal/kg/day.

Use the look-up tables in **Appendix 9** for amounts of F100-Diluted (severe wasting) or F75 (bilateral pitting oedema) for infants under 6 months in stabilisation.

- Feed by cup and saucer, or by NG tube (drip, using gravity not pumping) when the infant is not taking sufficient milk by mouth. Feeding by NG should not be longer than 3 days and only during stabilisation.
- Once appetite returns and oedema starts resolving, transition the feeding of the infant to prepare for rehabilitation of catch-up growth.

Feeding during transition:

- Give expressed breast milk, or, infant formula or F100-Diluted at 150–170 ml/kg/day, or increased by one-third over the amount given in the stabilisation phase providing 110–130 Kcal/kg/day.
- Use the look-up table in **Appendix 9** for amounts of infant formula milk or F100-Diluted for infants under 6 months without the prospect of breastfeeding in transition.

Criteria to progress from transition to rehabilitation:

- Good appetite (infant takes at least 90% of the infant formula milk or F100-Diluted prescribed for transition)

- Complete loss of bilateral pitting oedema
- Minimum stay of 2 days in the transition
- No other medical problem

Feeding during rehabilitation:

- Give expressed breast milk, infant formula milk or F100-Diluted provided at 200 ml/kg/day, or twice the volume given during stabilisation, providing 150 Kcal/kg/day.
- Use the look-up tables in **Appendix 9** for amounts of infant formula milk, F100-Diluted for infants under 6 months with no prospects of being breastfed in rehabilitation.

Mothers or carers who are expected to give replacement feeding to their infants after they are discharged from IPD-SAM need clear guidance on safe preparation and use of replacement feeds. Whenever formula milk is provided as part of management of SAM in infants, it should not confuse or compromise the wider public health message concerning exclusive breastfeeding for infants under 6 months of age. Early introduction of complementary foods for older infants could be considered depending on maturity of swallowing.

5.17. Monitoring of Vital Signs in IPD-SAM

Vital signs*	Normal Ranges	Danger Signs	Danger sign could suggest:
Appetite	Good appetite is eating well, asking for more, passing observed RUTF appetite test	Poor appetite, appetite loss (anorexia)	Failure to respond to treatment, infection
Blood glucose	≥ 3 mmol/L or ≥ 54 mg/dl	< 3 mmol/L or < 54 mg/dl; sleeping with eyelids open	Hypoglycaemia
Cold extremities	None	Cold hands (check with back of the hand) with capillary refill longer than 3 seconds and/or weak and fast pulse	Shock
Haemoglobin (Hg)	≥4 g/dl or ≥6 g/dl with respiratory distress	Severe pallor; Hg <4 g/dl or <6 g/dl with respiratory distress	Severe anaemia, anaemic heart failure
Mental state	Clinically well and alert	Change in mental state, drowsy, lethargic, unconscious	Shock, failure to respond to treatment, severe infection
Oedema	None	New oedema, eye-lid oedema (puffy eyes), increasing oedema	Fluid overload, no response to treatment
Pulse rate	0–2 months: Pulse 80–160 beats/minute 2–12 months: Pulse 80–160 beats/minute 12–60 months: Pulse 80–140 beats/minute	Increase in pulse rate of ≥ 25 beats/minute	Many reasons, including crying and fear
Respiration rate	0–2 months: <60 breaths/minute** 2–12 months: <50 breaths/minute** 12–59 months: <40 breaths/minute	Fast breathing (0–2 months ≥ 60 breaths/minute; 2–12 months: ≥ 50 breaths/minute; 12–59 months: ≥ 40 breaths/minute), difficult laboured breathing	Fast breathing: pneumonia

Pulse AND respiration rate	See above	Increase in pulse rate of ≥ 25 beats/minute <i>and</i> increase in respiratory rate of ≥ 5 breaths/minute (Other signs: enlarged liver, distension jugular veins, eye-lid oedema, gallop rhythm, fine crackling at lungs)	Congestive heart failure from overhydration, too fast rehydration; Infection
Stool	Normal stool (< 3 loose stools per day)	Fluid loss by 3 or more loose stools per day, and recent sunken eyes, watery, mucoid or bloody diarrhoea; Persistent diarrhoea (for >14 days)	Dehydration, Infection; Osmotic or lactase diarrhoea
Temperature	Axillary temperature $\geq 35.0^{\circ}\text{C}$ and $< 37.5^{\circ}\text{C}$ (Rectal temp. readings are 0.5°C higher)	Any sudden increase or decrease in temperature, very low $< 35.0^{\circ}\text{C}$ or very high $\geq 38.5^{\circ}\text{C}$ temperature	Infection; Hypothermia (child being uncovered, missed feed)
Urine	Normal	Increased frequency of passing urine, pain on passing urine, no passing urine, positive dipstick	Urinary tract infection
Vomiting	None	Fluid loss by severe vomiting, and recent sunken eyes	Dehydration
Weight and weight gain	See trend of weigh gain on WAZ growth chart	Weight loss (in the absence of oedema), weight gain during stabilisation (in the absence of rehydration), static weight during rehabilitation, large weight changes	Failure to respond to treatment

** Infants < 12 months will normally breath fast without having pneumonia. Unless the infant's normal respiratory rate is known to be high, assume either overhydration or pneumonia. Careful evaluation and taking into account prior fluid administration will help differentiate the two conditions and plan appropriate treatment. Infants < 2 months may have normal periods of apnoea.

5.18. How to..... in IPD-SAM

How to measure blood glucose:

Use paper strips such as Dextrostix or Glucostix to measure blood glucose. 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.

Measure blood glucose 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).

How to measure fever:

Using a rectal thermometer:

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

Using an axillary thermometer:

- Shake the thermometer down to below 35°C.
- Place it under the child's armpit.
- Keep it in place for 3 minutes.
- If the reading is below 35°C, take a rectal temperature for more accurate reading.

How to give a gastric lavage:

- Insert 50 ml of 5% dextrose or 10% sugar water into the stomach via an nasogastric tube and aspirate the contents back immediately. This should be repeated until the gastric aspirate becomes clear.
- 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 what was inserted, make up the volume again to 5 ml/kg with 10% sugar water. Do not discard the aspirated fluid.
- Keep the child warm.

How to give intravenous fluids for children with SAM in case indicated:

- Insert an IV line (and draw blood for emergency laboratory investigations).
- Weigh the child (or estimate the weight) to calculate the volume of fluid to be given.
- Start IV fluid at 10–15 ml/kg over 1 hour [1]; the amount of fluid given should be guided by the individual child's response and whether there is a history of profuse watery diarrhoea.
- Avoid over-hydration; monitor the pulse and breathing at the start and every 5–10 minutes to check whether they are improving.
- Use one of the following solutions according to availability:
 - Ringer's lactate with 5% glucose (dextrose), or
 - Half-strength Darrow's solution with 5% glucose (dextrose)
 - If neither is available, use 0.45% NaCl plus 5% glucose (dextrose).

How to do the skin-to-skin or kangaroo technique for infants and small children:



Warm the infant or small child by putting the child on the mother's bare chest (skin-to-skin) and cover them up together.

How to test the appetite in children 6–59 months of age:

- Do the test in a quiet, separate area to allow the carer and child time to get accustomed to the ready-to-use therapeutic food (RUTF).
- Explain the purpose and procedure of the test to the carer
- Advise the mother or carer:
 7. Wash her hands, wash the child's hands and clean the RUTF sachet
 8. Knead the sachet for a few seconds before opening to ensure a homogenous mixture
 9. Tear open the sachet at the corner
 10. Sit the child on your lap and gently offer the RUTF by squeezing the sachet
 11. Encourage the child to eat the RUTF without force-feeding
 12. Offer the child plenty of clean water to drink from a cup while the child eats the RUTF
- Observe the child for up to 30 minutes and decide the outcome:

Good appetite	Poor appetite
Passing the appetite test:	Failing the appetite test:
Child eats at least 1/3 of a 92 g RUTF sachet or 3 teaspoons within 30 minutes	Child does NOT eat 1/3 of a 92 g RUTF sachet or 3 teaspoons within 30 minutes

How to do the supplemental suckling technique:

The supplemental suckling technique (SST) entails the infant suckling at the breast while also taking the milk supplement from a cup through a fine tube that runs alongside the nipple. The infant is nourished by the milk supplement while suckling stimulates the breast to produce more milk:



- While the mother holds a cup with the milk supplement, put the end of a nasogastric tube (size nº 8) in the cup and place the tip of the tube on the breast at the nipple.
- Place the cup 5–10 cm below the level of the nipple for easy suckling.
- Offer the infant the breast with the right attachment.
- When the infant suckles more strongly, lower the cup up to 30 cm.

How to record milk intake in IPD-SAM:

- It is vital to record milk intake accurately on the IPD-SAM record that has an area designated for monitoring milk intake.
- Each feed time is associated with a box of four squares. Each large square represents one feed at the indicated time of day, and each small square represents $\frac{1}{4}$ of the feed given at each meal.
- The nurse estimates the amount with the help of the carer.
- The chart is completed AFTER the feed has been given.

Example of feeds between 0600 and 1500 h over 2 days:

- On Day 1, the child is fed 100% at 0600 h using an NG tube (indicate NG). At 0900 h, the child was able to take 50% orally and 50% by NG tube. The 1200 h and 1500 h feeds were taken entirely orally.
- On Day 2, at 0600 h, 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 took all of the milk with almost no losses through vomiting. The appetite improved after day 1, and the milk is taken orally.

	Time	Day 1		Day 2	
A = Absent V = Vomiting R = Refused NG = Nasogastric tube Volume taken: 100% 4x X $\frac{3}{4}$ 3x X $\frac{1}{2}$ 2x X $\frac{1}{4}$ 1x X	0600	NG	NG	X	X
		NG	NG	X	V
	0900	X	X	X	X
		NG	NG	X	X
	1200	X	X	X	X
		X	X	X	X
	1500	X	X	X	X
		X	X	X	X

5.19. Failure to Respond to Treatment in IPD-SAM

In case of failure to respond to treatment, the child should undergo a full and thorough assessment to identify newly developed or missed conditions or underlying disease and receive prompt treatment.

Failure to respond to treatment during stabilisation:

- (Re-)appearance of any danger sign
- Failure to gain consciousness
- Failure of medical complication to start resolving
- Failure to start to lose oedema, or increased oedema
- Failure to regain appetite

Failure to respond to treatment during transition:

- (Re-)appearance of any danger sign
- Maintaining or increasing oedema or (re-)appearance of oedema
- Weight gain > 5 g/kg/day or loss of weight in the absence of oedema

Failure to respond to treatment in rehabilitation:

- Presence of any danger sign
- (Re-)appearance of oedema
- Failure to gain weight of at least 5 g/kg/day, static weight or loss of weight

Possible reasons of failure to respond to treatment in IPD-SAM:

Problems with care practices:

- Poor environment for malnourished children, including hygiene (e.g., hand washing of staff and carers, body hygiene of child, bed and ward hygiene)
- Insufficient or inadequately trained staff
- Inaccurate anthropometric equipment and insufficient essential supplies
- Inadequate detection of medical complications, infections and serious underlying diseases
- Lack of compliance with specific and routine treatment protocols
- Incorrect preparation or provision of therapeutic food
- Insufficient emotional and physical stimulation of the child
- Inadequate counselling and psycho-social support to the mother or carer, or lack of engagement of mother or carer in the rationale for the treatments given
- Inadequate individual case monitoring, quality improvement and quality performance monitoring

Problems with the treatment of the child:

- Feeding: Insufficient therapeutic food and/or fluid taken, insufficient vitamin or mineral supplementation, malabsorption of nutrients, rumination
- Undetected or untreated infections or serious underlying disease
- Psychological trauma

RUMINATION is a condition that occurs in up to 10% of emotionally impaired children with SAM. This should be suspected when a child eats well, but fails to gain weight. Children with this condition regurgitate food from the stomach into the mouth, and then vomit part of it and swallow the rest. This usually happens when they are ignored, so it may not be observed. They are often unusually alert and suspicious, may make stereotyped chewing movements and do not appear distressed by vomiting. Rumination is best cared for by staff who have experience with this problem. Staff will show disapproval whenever the child begins to ruminate without intimidating the child but encouraging good behaviour.

5.20. Involving Mothers in Care

Principles on involving mothers in care:

Mothers or carers are encouraged to involve in the care of their children during treatment and recovery of acute malnutrition.

Mothers or carers involve in supporting their children's recovery in the following ways:

- Participating in the treatment of their children will help mothers or carers understand the child's condition, support progress and take responsibility for care.
- Receiving individual counselling during the health facility visits and in the community at the health post or through home visits will help mothers or carers believe in their ability to feed and care for their children effectively according to their children's age.
- Providing sensory stimulation and physical and emotional support for their children will address the physical, social, emotional, and intellectual developmental needs of the child. Integrating simple early stimulation, learning and play activities with nutrition support is important to increase and sustain the impact of treatment on a young child's health and nutritional status.
- Enhancing maternal knowledge and practice of early childhood development activities, mother and child groups strengthen connections among women and raise awareness of the risks of malnutrition, overweight and undernutrition.

Mothers and carers have opportunities to improve their own health and wellbeing when attending services for their ill children by:

- Receiving health and nutritional support as needed.
- Receiving psychosocial support as needed [13]. E.g., mental health interventions are part of the Basic Package of Health Services (BPHS) and psychosocial counsellors are present in comprehensive health centres and hospitals.
- Caring for their ill children enhances maternal wellbeing.
- Participating in health and nutrition education sessions reinforces the same messages on improving feeding and care practices and provides

and opportunity to discuss with other mothers and create mother-to-mother support.

- Linking with community initiatives and accessing social protection or safety nets help strengthen their coping ability and confidence.

Key messages for health and nutrition education:

- Ensure healthy maternal nutrition.
- Start breastfeeding at the first hour after delivery.
- Ensure exclusive breastfeeding until 6 months of age.
- Give healthy complementary feeding starting at age 6 months up to 35 months and continue breastfeeding.
- Continue good feeding during and after illness.
- Wash hands before handling food and after using the toilet.
- Store food in a clean way.
- Boil water before consumption.
- Use zinc with ORS when diarrhoea.
- Access biannual vitamin A supplementation and deworming.
- Access iodized salt and fortified blended foods.
- Use latrines and safely dispose of waste.

Guidance on sensory stimulation and emotional support of the child:

- **Ensure the presence and involvement of mothers or carers during treatment in OPD-SAM or IPD-SAM.** Encourage mothers or carers to feed, hold, comfort and play with children as much as possible. IPD-SAM wards should have adult beds for mothers or carers to sleep with their children. However, as few other adults as possible should interact with the children. Adults should talk to, smile at and show affection to the children. Medical procedures such as venepuncture should be done by the most skilled person available preferably out of earshot and sight of the other children. Immediately after any unpleasant procedure, children should be held and comforted.
- **Make the play environment as stimulating as possible.** Rooms or wards have bright colours, decorations and colourful mobiles that interest children. Brightly coloured aprons more informal clothing are encouraged. A radio can provide background music. The atmosphere in the ward should be relaxed, cheerful and welcoming. Toys should be available in the children's beds and rooms, as well as in play areas, and should be safe, washable and appropriate for the children's age and level of development. In low-resource settings, health workers that engage with mothers or carers can be trained in activities appropriate for each stage of development. Children need familiar objects and scenarios with toys and play scenes appropriate for their developmental age to learn.
- **Provide one-on-one counselling of mothers or carers.** Health providers should provide mothers or carers with precise messages on feeding and care practices. For example, messages on the importance of breastfeeding should include how breastfeeding provides an opportunity to show warmth and love and communicate through singing, touch and facial expression. The messages should indicate that care provided in this way is as vital as the breast milk.
- **Deliver health and nutrition messages to mothers or carers in an interactive way.** Health messages to promote good hygiene, proper nutrition, infant stimulation and early child development should be delivered using large pictorial cards and interactive methods, such as provided in the CBNP community kit. Mothers' and carers' confidence and feeling of security and household status influence their children's nutritional intake and should be taken into account when delivering

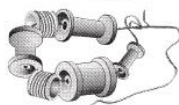
messages on feeding and care practices. Messages and visuals should pair to form a consistent narrative structure.

- **Invite mothers or carers and babies to mother and baby groups.** Time can be dedicated to mother and baby groups in child-friendly spaces. Mother and baby groups enhance maternal knowledge and practice of early childhood development activities and strengthen connections among women. Peer demonstrations and support enhance care practices knowledge and experience. This direct and continuing social support is one of the key elements in improving maternal mood and fostering positive psychological and community resilience. The groups also provide safe spaces for babies to interact with their carers and one another and for carers to watch and learn from each other.
- **Visit mothers or carers in their homes.** Home visits allow an integrated holistic approach tailored to the infant's or young child's needs. This is particularly beneficial for infants with developmental delays or disabilities who may need additional individual attention. Health, nutrition, hygiene, infant stimulation and responsive interactive parenting can be addressed in a supportive manner. Home visits provide an opportunity to praise good parenting and feeding practice and model additional practices.
- **Involve communities in early childhood development activities.** Communities should be engaged in the discussing, planning, decision making, implementing, monitoring and evaluating early childhood development activities from the outset. Open discussion meetings through community groups can advertise and explain ideas and help people agree on the best methods. They also help raise awareness about the importance of these activities.
- **Encourage child participation.** Young children are active agents in their own development process and shape their environment through their participation. Mothers or carers should be encouraged to listen to and consult with their infants and children in any activities. Creative media of art and play can help very young children express their views. Children with mental and physical disabilities or children with HIV are at higher risk of being neglected and not receiving appropriate nutrition or play opportunities. Every effort should be made to ensure the willing participation of children from vulnerable groups.

5.21. Toys

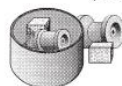
Ring on a string (from 6 months)

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.



In-and-out toy (from 9 months)

Any plastic or cardboard container and small objects (not small enough to be swallowed).



Drum (from 12 months)

Any tin with a tightly fitting lid.

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.



Mirror (from 18 months)

A tin lid with no sharp edges.

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.

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.



Stacking bottle tops (from 12 months)

Cut at least three identical round plastic bottles in half and stack them.



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.



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5.22. Planning for IPD-SAM

IPD-SAM targets children under 5 years of age identified with complicated SAM. IPD-SAM services are provided in a health facility with 24-hour care. Planning for IPD-SAM covers needs in both the emergency room and the IPD-SAM ward.

- **Team:** Trained, experienced and competent staff are essential for well-functioning IPD-SAM. Staff should be rotated at times that minimize disruption of routine procedures and allow mentoring of and learning for new staff. Loss of experienced staff should be avoided. Effective management should ensure good monitoring of each child by trained staff and use of the most experienced staff for supervising and reliable record-keeping. Staff involved in preparing therapeutic feeds should be checked to ensure that they follow the correct procedures for weighing, measuring, mixing, cooking and storing the product. They should be observed making the feeds to ensure recipes are correct and all ingredients are added. People with infections should not handle any food.

Staff **attitudes** can determine whether treatment of a very ill child succeeds or fail. Staff that believe that a child is beyond help and mothers that are neglectful may pay less attention to the child. Such a child often fails to respond to treatment, which seems to confirm the opinion of the staff. This clinical prejudice may be difficult to correct, especially when it reflects the views of the most experienced staff. It is essential to remind staff frequently that each child's wellbeing depends on their efforts and that every child must be given their full attention.

List of IMAM IPD-SAM activities with responsible persons:

IPD-SAM activities for children:	Suggested responsible person:
Emergency triage, assessment and treatment (ETAT)	Physician
Routine screening	Physician or nurse
Anthropometric measurement	Physician or nurse
Initial assessment and history	Physician
Appetite test	Physician and nurse
Laboratory test	Physician and nurse
Differential diagnosis and treatment plan	Physician

and referral decision	
Start of treatment and close monitoring of danger signs	Physician
Start of re-feeding and close monitoring of feeding and danger signs	Nurse
Food preparation	Nurse
Daily care and progress monitoring	Physician and nurse
Vaccination schedule completion	Nurse
Decision to refer to OPD-SAM to continue treatment as outpatient (option 1) or end treatment (option 2)	Physician and nurse
Health and nutrition education	Nutrition counsellor
Mother's involvement in care, and care of the mother	Nurse, midwife, nutrition counsellor, mental health counsellor and CHS
Registration	Nurse
Recording on treatment card and ration card during the consultation	Physician
Monthly reporting	Responsible nurse

- **Infrastructure:** Wherever possible, malnourished children should be managed in a special **IPD-SAM ward** or designated area of the paediatric ward where trained staff are available. The ward should be warm (25–30°C) with no draughts. The ward must be well organised, with running water, electricity and quality diagnostic and feeding equipment. **Infection control** procedures and **hand washing** of staff and carers must be strictly observed at the following five points of care:

- Before contact with the child
- Before an aseptic task
- After exposure to body fluids
- After contact with the child
- After contact with the child's surroundings

The kitchen used for **therapeutic food preparation** should be equipped with cooking utensils and clean water and use standard hygiene practices for storing, preparing and handling therapeutic food. Any prepared solid food that will be stored for more than 2 hours should be refrigerated (after allowing it to cool to room temperature) and re-heated until it is thoroughly hot and then allowed to cool before serving.

Other requirements are gender-sensitive latrines, facilities for bathing and cooking for mothers or carers and a **playroom** with toys for sensory stimulation and emotional support of children and for teaching mothers or carers to play with their children.

- **Equipment and renewable supplies of drugs, specialised food products, job aids and forms:** Renewable supply needs are forecasted annually and requested quarterly using the standard forms, or can be calculated as shown below. Annual forecasting guides quarterly requests, which may be adjusted because of expected changes in caseload. Minimum requirements are covered in **Appendix 11**.

About 10–15% of children with SAM develop complications and need IPD-SAM. On average, the duration of treatment for stabilisation in IPD-SAM is 7–10 days. For all children, about 2 kg of F75 per child is planned, which translates in about 6 kg of F75 per month for one paediatric bed occupation. Less than 5% of children may not be able to consume RUTF and will continue rehabilitation with F100 for catch-up growth. For these children, about 9 kg of F100 per child is planned. For about 95% of all children RUTF will be needed for a few days.

Therapeutic food product requirements for 100 SAM cases in IPD-SAM:

Therapeutic product	Use	Estimated children's need	Number of children using (P)	Duration of treatment	Quantity per treatment (Q)	Quantity/100 SAM cases (P x Q x 100)
F75	Stabilisation	10–15% of overall SAM and 100% of IPD admissions		5–7 days	2 kg	
F100	Rehabilitation	5% of IPD admissions		3 weeks	9 kg	
RUTF	Transition	95% of IPD admissions		2 days	4 sachets	
ReSoMal	Stabilisation	90% of IPD admissions		2–3 days	0.084 kg	

5.23. Monitoring the Quality of Case Management in IPD-SAM

- **Team:** Monitor quality of individual care focusing on danger signs, assessment, progress and outcome of treatment, reflecting adherence to guidelines and adequate organisation of care.
- **Recording:** Record individual information in the register on admission and on the treatment record during treatment to monitor individual clinical care until the end of treatment. The treatment card indicates what to assess at the start of treatment, during treatment and at the end of treatment. A unique registration number is provided and recorded on all forms.
- **Danger signs and treatment progress:** Monitor closely danger signs and treatment progress, which are essential for the child's recovery. Any failure to diagnose and immediately treat life-threatening and other medical complications, infections or serious underlying diseases can adversely affect treatment outcome by causing development of a more serious condition, delay in response, non-response, relapse or death. Any child death needs to be audited to understand the cause and what elements of care need improvement. Referral to other specialised care may be necessary. In case of defaulting, a home visit may be requested to find out the reason.
- **Monitoring feeding of the child:** Allocate sufficient time and adequate staff to feed the child, day and night. Feeding a malnourished child takes about 15 minutes and food is given every 3 hours,. One person is needed, day and night, to feed 12 children. When therapeutic food is given every 2 hours, more staff are needed. If there are not enough staff, treatment of a child may fail because insufficient time is taken for feeding. Having mothers or carers help feed their children can relieve this situation, but they should be supported for correct feeding and care practices. Mothers' or carers' involvement in care and preparedness for discharge are also indicated on the treatment card. Re-feeding of the child is carefully monitored and indicated on the Daily Care Card. Health and nutrition counselling and actions are adapted to the child's health and nutritional status, progress and needs, and mothers or carers receive treatment if needed.

- **Referral tracking:** Track movement of children between the community and health facilities and/or services using the referral slip.
- **Indicators:** Record date, nutritional status and type, start and end of treatment in the register and on the treatment card. LOS in treatment for stabilisation or full recovery, weight gain at the end of treatment can be indicated in the register and on the record.
- **Monthly reporting:** Tally information from the register on admissions and end of treatment on the monthly report. The team uses the monitoring tools to verify quality by observing care, discussing with service providers and users and checking monitoring records.

Standard monitoring categories in IPD-SAM for children 6–59 months of age:

ENTRY (start of treatment in IPD-SAM)	
Newly admitted	Child met the criteria for start of treatment This includes relapsed cases : children who relapsed within 2 months of ending treatment of a previous episode (2 months indicates recovery from the same rather than a new episode of illness).
Returned defaulter	Child defaulted and returned within 2 months to continue treatment
Referred from OPD	Child deteriorated when in treatment in OPD-SAM
Transferred-in	Child moved from another IPD-SAM/hospital to continue the same level of care
EXIT (end of treatment in IPD-SAM and/or discharge from hospital):	
Stabilised—Referred to OPD*	Child was treated successfully for stabilisation and met the referral criteria to continue treatment in OPD-SAM (child has not fully recovered and will complete treatment in OPD-SAM)
Cured	Child remained in treatment until full recovery and met criteria for end of treatment
Died	Child died while in treatment
Defaulted	Child was absent for more than 2 days while in treatment The reason for defaulting is investigated (died, moved, or other). This category may include early discharge : child left the hospital against medical advice.
Non-cured	Child remained in treatment for 2 months and did not reach the end of treatment criteria despite full assessment and treatment
Medical referral*	Child was referred to specialised care for treatment of an underlying condition (e.g., child was referred to a TB treatment site where SAM treatment will ideally continue)
Transferred-out*	Child moved to another IPD-SAM/hospital to continue the same level of care

* Child has been discharged from hospital but did not end treatment.

5.24. Monitoring the Quality of IPD-SAM Services

- **Aim:** Monitor key performance indicators that are compared to national standards to interpret the level of performance of IMAM services and inform service improvements.
- **Methods:** Key performance indicators are calculated monthly per health facility based on information on children or PLW who started treatment and ended treatment in IPD-SAM using the register and treatment records.
- **Tools:** These include registers, treatment cards, tally sheets, monthly reporting forms and an electronic database for a national IMAM repository. The *IPD-SAM Monthly Reporting Form* is a summary spread sheet for easy recording.
- **Key indicators for a given month are:**
 - Number of new admissions (incidence)
 - Number of children in treatment (beneficiaries currently registered)
 - Cure rate, or proportion of children who ended treatment cured out of all children that ended treatment (discharges)
 - Death rate, or proportion of children who ended treatment because they died out of all children that ended treatment (discharges)
 - Default rate, or proportion of children who ended treatment because they defaulted out of all children that ended treatment (discharges)
 - Therapeutic and supplementary food used and in stock

Indicators of monthly service outcomes for IPD-SAM:

Stabilisation rate (%)	= $\frac{\text{Number of children who were stabilised that month} \times 100}{\text{Total number of children who were discharged from IPD-SAM that month}^\circ}$
Death rate* (%)	= $\frac{\text{Number of children who died that month} \times 100}{\text{Total number of children who were discharged from IPD-SAM that month}}$

Default rate (%)	= $\frac{\text{Number of children who defaulted that month} \times 100}{\text{Total number of children who were discharged from IPD-SAM that month}}$
Average length of stay for stabilisation (days)	= $\frac{\text{Total number of days in stabilisation for all children referred to OPD-SAM that month}^{\wedge}}{\text{Total number of children who were referred to OPD-SAM that month}}$
Referral to OPD-SAM rate (%)	= $\frac{\text{Number of children who were referred to OPD-SAM after stabilisation that month}}{\text{Total number of children who were discharged from IPD-SAM that month}}$
<i>Total number of children who were discharged from IPD-SAM is all children who have been stabilised, died, defaulted and non-cured; * Case fatality during treatment; ^ Referred to OPD-SAM assumes end of stabilisation.</i>	

Performance is compared to national standards or benchmarks for quality of IMAM services for children 6–59 months of age. If IMAM services do not comply with national standards, a narrative report should explain the reasons for the outcomes and suggest actions to address the issues.

National standards of quality of IMAM services for children 6–59 months of age:

Indicator	IPD-SAM [^]	IPD-SAM [°]	OPD-SAM	OPD-MAM
Cure rate	/	> 75%	> 75%	> 75%
Default rate	< 15%	< 15%	< 15%	< 15%
Death rate*	< 10%	< 10%	< 10%	< 3%
Average length of stay	< 7 days	< 30 days	< 56 days	< 56 days
Average weight gain	/	> 5 g/kg/day	> 5 g/kg/day	> 5 g/kg/day

[^] Option 1: IPD-SAM refers children to OPD-SAM after stabilisation; [°] Option 2: IPD-SAM retains children until full recovery; * Case-fatality rate during treatment.

MODULE 6. OPD-MAM for PLW

Job Aids:

- 6.1. Overview of Activities in OPD-MAM for PLW
- 6.2. Planning for OPD-MAM for PLW
- 6.3. Monitoring the Quality of Care of OPD-MAM for PLW

Forms and registers:

- Form 3. OPD-MAM for PLW Register
- Form 8. OPD-MAM for PLW Record
- Form 14. OPD-MAM Monthly Reporting Form
- Form 15. BNA Questions Monthly Reporting Form
- Form 19. Prescription Card
- Form 20. Health Facility Supervisory Checklists
- Form 21. Quarterly Nutrition Supply Request Form

6.1. Overview of Activities in OPD-MAM for PLW

Active and routine monitoring for nutrition vulnerability of pregnant women from the time of confirmed pregnancy, and lactating women with infant less than 6 months of age:

Assess	Classify	Identify treatment
MUAC Presence of bilateral pitting oedema Breastfeeding capacity for mother with infant and nutritional status of infant	○ MUAC < 185 mm, or ○ Presence of bilateral pitting oedema	○ Register ○ Give fortified food supplement ○ Refer to hospital for further investigation and adapted treatment
	○ MUAC ≥ 185 mm and < 230 mm	○ Register ○ Give fortified food supplement ○ Ensure iron-folate supplementation is given ○ Give nutrition counselling ○ Advice to return in one month for a follow-up visit ○ Refer to monthly community-based and facility-based nutrition services: ▪ Growth monitoring for children under 2 ▪ Screening for acute malnutrition for children under 5 and PLW ▪ IYCF for children under 2: Counselling, health and nutrition education, food demonstrations
	○ MUAC ≥ 230 mm	○ Refer to monthly community-based and facility-based nutrition services: ▪ Growth monitoring for children under 2

- Screening for acute malnutrition for children under 5 and PLW
- IYCF for children under 2: Counselling, health and nutrition education, food demonstrations

Monitoring at monthly follow up visits after start of treatment:

Assess	Classify	Continue or end treatment
MUAC Bilateral pitting oedema	○ MUAC < 185 mm, or ○ Presence of bilateral pitting oedema	○ Refer to hospital for further investigation and adapted treatment
	○ MUAC ≥ 185 mm and < 230 mm, and infant < 6 months of age	○ Continue OPD-MAM
	○ MUAC ≥ 230 mm in two consecutive visits, or ○ Infant reaches 6 months of age	○ End OPD-MAM

6.2. Planning for OPD-MAM for PLW

OPD-MAM consists of services in the outpatient department (OPD) for PLW with infants under 6 months of age with acute malnutrition and is provided in the Mother and Child Health (MCH) room of the health facility. Its activities are aligned with the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) strategy [13].

- **Team:** The midwife in the MCH section of the health facility is the in-charge, assisted by the nutrition counsellor, and organises health and nutrition education and food demonstrations with the support of the health facility team and supervisor. Below is a list of IMAM OPD-MAM for PLW activities with responsible persons:

OPD-MAM activities for PLW:	Suggested responsible person:
Routine screening	Midwife
Initial assessment and history, diagnosis and referral	Midwife
SuperCereal provision	Food distributor
Decision end of treatment	Midwife
Health and nutrition education	Nutrition counsellor
Care of the mother	Midwife, nutrition counsellor, mental health counsellor and CHS
Registration and recording on treatment card and ration card during the consultation	Midwife
Monthly reporting	Responsible midwife

- **Infrastructure and space:** The health facility decides how to organise OPD-MAM for PLW at the MCH. Finding enough space to store supplies may be challenging.
- **Equipment and renewable supplies of Super Cereal, job aids and forms:** Super Cereal supplies are forecasted annually and requested quarterly using the standard forms. Annual forecasting guides quarterly requests, which may be adjusted for expected changes in caseload. The quarterly requirement for Super Cereal per PLW depends on treatment duration and is based on the monthly supplement of 7.5 kg.

6.3. Monitoring the Quality of Care of OPD-MAM for PLW

- **Team:** The midwife responsible for OPD-MAM for PLW, with support from the health facility team, monitors the quality of individual care and services, focusing on treatment progress and outcome and adhering to guidelines and organisation of care.
- **Recording:** On admission and each follow-up visit, the midwife records individual information in the Register and on the *OPD-MAM for PLW Record* until the end of treatment. The record indicates which data to assess at the start of treatment, during treatment and at the end of treatment. A unique registration number is provided and recorded on all forms for the PLW.
- **Referral tracking:** Referral slips track movement of PLW between the community and health facility and/or services.
- **Adaptations to care:** On each visit, PLW receive health and nutrition counselling and interventions adapted to their health and nutritional status, progress and needs. If their nutritional status stagnates or worsens, they receive a history and clinical examination to reveal the causes or are referred to hospital if necessary. If they do not return to MCH/OPD-MAM, the CHS may ask the CHW to do a home visit for a defaulting and mortality audit.
- **Indicators:** Date, nutritional status and type, start and end of treatment are recorded in the register and on the treatment card. Standard monitoring categories are listed in **Table 10.5**. LOS, MUAC on admission or MUAC gain during treatment are not recorded in OPD-MAM for PLW but could be assessed for research or evaluation purposes.
- **Monthly reporting:** Information on admissions and end of treatment from the register is tallied in the monthly report. The team uses the monitoring tools to verify quality by observing care, discussing with service providers and users and checking monitoring records.

Monitoring categories in OPD-MAM for PLW

ENTRY at start of treatment	
<i>New admission</i>	Pregnant woman from the time of confirmed pregnancy or lactating woman with a breastfeeding infant under 6 months of age met criteria for start of treatment
<i>Returned defaulter</i>	To be changed as discussed
<i>Transfer-in</i>	PLW moved from another OPD-MAM site to continue the same level of care
EXIT at end of treatment	
<i>Cure</i>	PLW remained in OPD-MAM until full recovery and met the end of treatment criteria
<i>Death</i>	PLW died while in OPD-MAM
<i>Default</i>	PLW was absent for two consecutive visits (exited on the third absented visit)
<i>Transfer-out</i>	PLW moved to another OPD-MAM site to continue the same level of care

Appendices and Forms

Appendix 1. Assessing Nutritional Oedema

Nutritional oedema is identified by bilateral pitting oedema in both feet by applying a firm pressure 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. Periorbital oedema is assessed visually; no pressure is put around the eyes.

Steps to identify severity of bilateral pitting oedema:



Step 1:

Look and feel for a pit in each foot. Bilateral pitting oedema in the feet only is classified as **mild oedema grade (+)**. If there is no oedema in the feet, STOP. Nutritional oedema always spreads from the feet upwards.



Step 2:

If oedema is present in the feet, check 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 oedema grade (++)**.



Step 3:

If oedema is present in the feet and lower legs, check the hands. Use the same technique.

Bilateral pitting oedema in the feet, lower legs and hands is also classified as **moderate oedema grade (++)**.

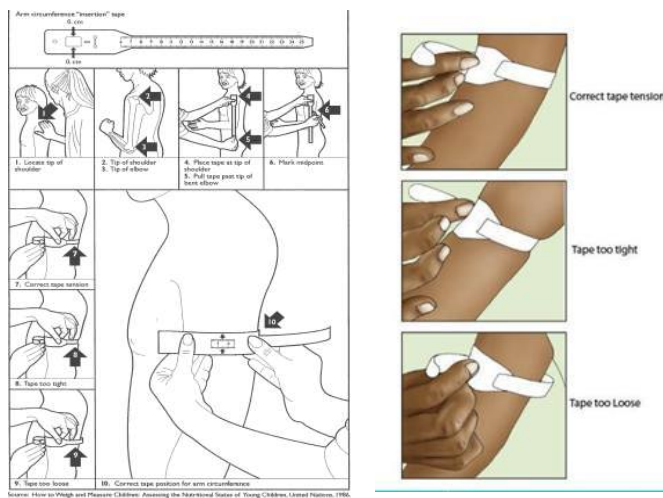


Step 4:

If moderate oedema is diagnosed, check for oedema around the eyes (periorbital oedema). Do not press on the eyes to look for pitting.

Bilateral oedema in the feet, legs and hands and oedema around the eyes is classified as **severe oedema grade (+++)**. Children with grade (+++) oedema are at high risk of mortality and need urgent attention in inpatient care.

Appendix 2. Measuring Mid-Upper Arm Circumference (MUAC)



- Ensure a MUAC tape for children with the correct cut-off points is used. Discard any other MUAC bands. The MUAC band should indicate:
 - **RED** or less than 115mm To indicate SAM
 - **YELLOW** or 115mm to less than 125mm To indicate MAM
 - **GREEN** or equal or greater than 125mm To indicate 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.



MUAC reading at the arrow

Measuring MUAC in older children and adults follow the same procedures.

Appendix 3. Measuring Weight

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

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 (Figure 1):

1. Before weighing the child, take all his/her clothes off.
2. Zero the weighing scales: 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.

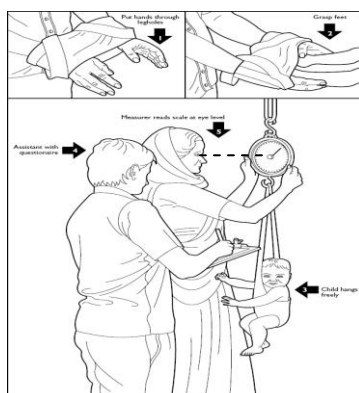


Figure 1. How to weigh a child using a Salter scale

How to use the UNISCALE (Figure 2)

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 2 years of age or able to stand still the child may be weighed alone on the scale.

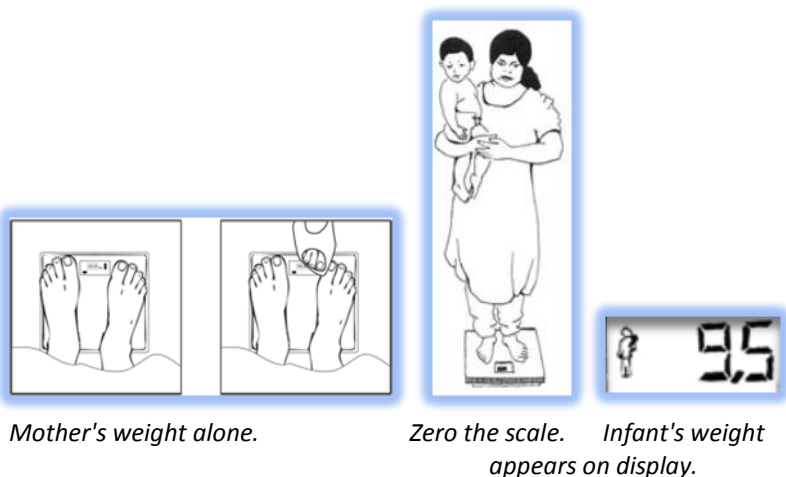


Figure 2. How to weigh a child using a UNISCALE

How to use the electronic infant scale (Figure 3)

- Have the caregiver remove the infant's clothes and hold the child.
- Put a soft cloth or the infant's wrapping on the scale and turn it on. Wait until the scale shows zeros.
- Within 60 seconds of the scale showing zeros, have the caregiver put the infant on the scale. Advise the caregiver to remain close but not to touch the infant or the scale. The scale will display the infant's weight.
- Read and write down the infant's weight with a 10-gram precision (e.g., 3 kg 470 g).
- Turn off the scale and remove the infant.

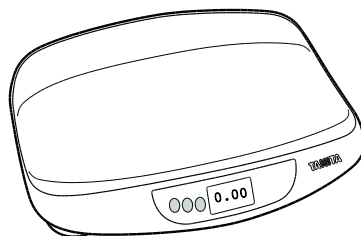


Figure 3. Electronic scale

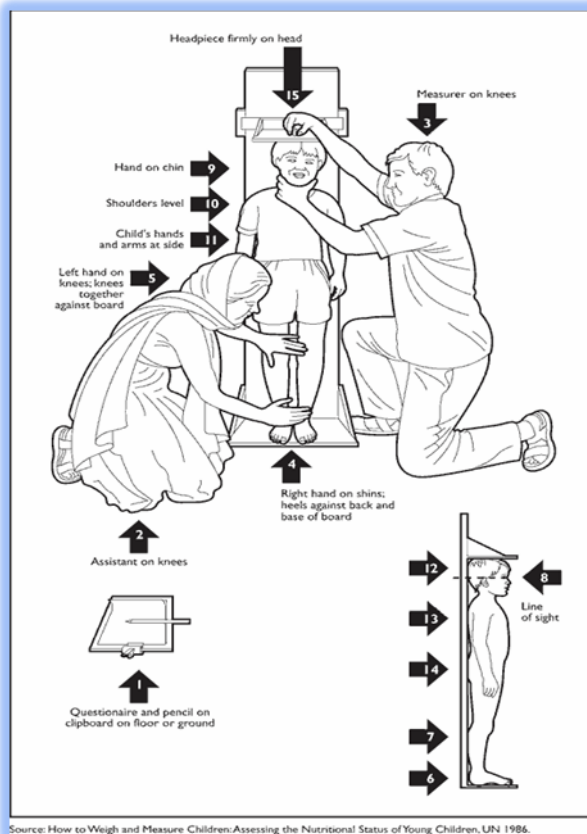
Appendix 4. Measuring Height or Length

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

Children 2 years of age and older are measured standing up, while those under 2 years of age are measured lying down. If 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 2 years of age or older or at least 87 cm tall are measured lying down, 0.7 cm is subtracted from the measurement.

For children 2 years of age:

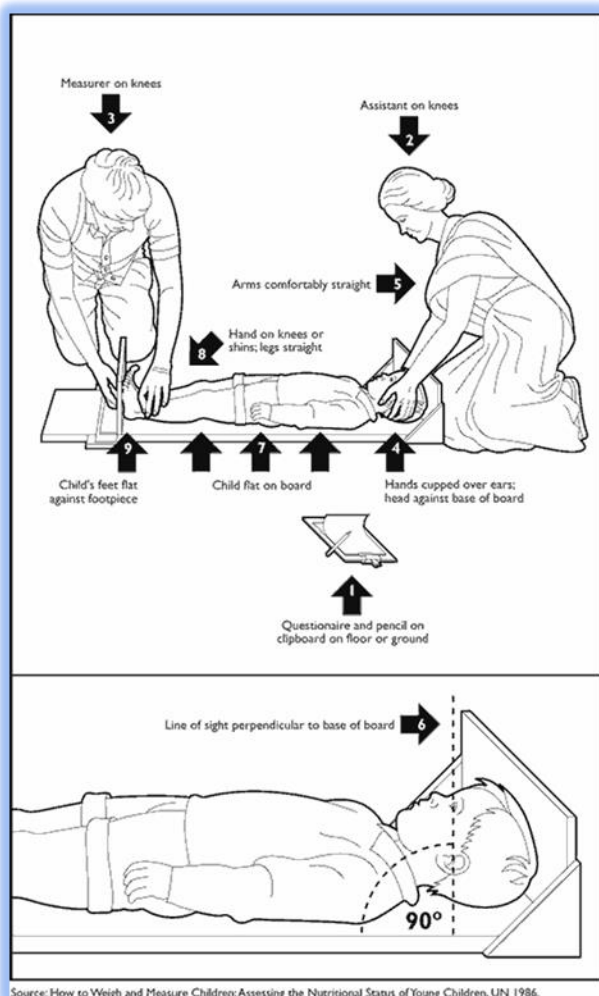
1. The child's shoes are removed.
2. The child is placed on the height board, standing upright in the middle of the board with arms at his/her sides.
3. The assistant firmly presses the child's ankles and knees against the board while the measurer holds the child's head straight.
4. The child's head, 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 under 2 years of age:

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.



Appendix 5. Weight-for-Height Look-up Tables (WHO Child Growth Standards)

Weight-for-Length Look-up Table Children 6–23 Months

If a child is under 2 years of age or is less than 87 cm tall and his/her age is not known, measure length while the child is lying down (recumbent). Use the weight-for-length look-up table.

Boys' weight (kg)				Length (cm)	Girls' weight (kg)			
–3 SD	–2 SD	–1 SD	Median		Median	–1 SD	–2 SD	–3 SD
1.9	2.0	2.2	2.4	45	2.5	2.3	2.1	1.9
2.0	2.2	2.4	2.6	46	2.6	2.4	2.2	2.0
2.1	2.3	2.5	2.8	47	2.8	2.6	2.4	2.2
2.3	2.5	2.7	2.9	48	3.0	2.7	2.5	2.3
2.4	2.6	2.9	3.1	49	3.2	2.9	2.6	2.4
2.6	2.8	3.0	3.3	50	3.4	3.1	2.8	2.6
2.7	3.0	3.2	3.5	51	3.6	3.3	3.0	2.8
2.9	3.2	3.5	3.8	52	3.8	3.5	3.2	2.9
3.1	3.4	3.7	4.0	53	4.0	3.7	3.4	3.1
3.3	3.6	3.9	4.3	54	4.3	3.9	3.6	3.3
3.6	3.8	4.2	4.5	55	4.5	4.2	3.8	3.5
3.8	4.1	4.4	4.8	56	4.8	4.4	4.0	3.7
4.0	4.3	4.7	5.1	57	5.1	4.6	4.3	3.9
4.3	4.6	5.0	5.4	58	5.4	4.9	4.5	4.1
4.5	4.8	5.3	5.7	59	5.6	5.1	4.7	4.3
4.7	5.1	5.5	6.0	60	5.9	5.4	4.9	4.5
4.9	5.3	5.8	6.3	61	6.1	5.6	5.1	4.7
5.1	5.6	6.0	6.5	62	6.4	5.8	5.3	4.9
5.3	5.8	6.2	6.8	63	6.6	6.0	5.5	5.1
5.5	6.0	6.5	7.0	64	6.9	6.3	5.7	5.3
5.7	6.2	6.7	7.3	65	7.1	6.5	5.9	5.5
5.9	6.4	6.9	7.5	66	7.3	6.7	6.1	5.6
6.1	6.6	7.1	7.7	67	7.5	6.9	6.3	5.8
6.3	6.8	7.3	8.0	68	7.7	7.1	6.5	6.0
6.5	7.0	7.6	8.2	69	8.0	7.3	6.7	6.1
6.6	7.2	7.8	8.4	70	8.2	7.5	6.9	6.3
6.8	7.4	8.0	8.6	71	8.4	7.7	7.0	6.5
7.0	7.6	8.2	8.9	72	8.6	7.8	7.2	6.6
7.2	7.7	8.4	9.1	73	8.8	8.0	7.4	6.8

7.3	7.9	8.6	9.3	74	9.0	8.2	7.5	6.9
7.5	8.1	8.8	9.5	75	9.1	8.4	7.7	7.1
7.6	8.3	8.9	9.7	76	9.3	8.5	7.8	7.2
7.8	8.4	9.1	9.9	77	9.5	8.7	8.0	7.4
7.9	8.6	9.3	10.1	78	9.7	8.9	8.2	7.5
8.1	8.7	9.5	10.3	79	9.9	9.1	8.3	7.7
8.2	8.9	9.6	10.4	80	10.1	9.2	8.5	7.8
8.4	9.1	9.8	10.6	81	10.3	9.4	8.7	8.0
8.5	9.2	10.0	10.8	82	10.5	9.6	8.8	8.1
8.7	9.4	10.2	11.0	83	10.7	9.8	9.0	8.3
8.9	9.6	10.4	11.3	84	11.0	10.1	9.2	8.5
9.1	9.8	10.6	11.5	85	11.2	10.3	9.4	8.7
9.3	10.0	10.8	11.7	86	11.5	10.5	9.7	8.9
9.5	10.2	11.1	12.0	87	11.7	10.7	9.9	9.1
9.7	10.5	11.3	12.2	88	12.0	11.0	10.1	9.3
9.9	10.7	11.5	12.5	89	12.2	11.2	10.3	9.5
10.1	10.9	11.8	12.7	90	12.5	11.4	10.5	9.7
10.3	11.1	12.0	13.0	91	12.7	11.7	10.7	9.9
10.5	11.3	12.2	13.2	92	13.0	11.9	10.9	10.1
10.7	11.5	12.4	13.4	93	13.2	12.1	11.1	10.2
10.8	11.7	12.6	13.7	94	13.5	12.3	11.3	10.4
11.0	11.9	12.8	13.9	95	13.7	12.6	11.5	10.6
11.2	12.1	13.1	14.1	96	14.0	12.8	11.7	10.8
11.4	12.3	13.3	14.4	97	14.2	13.0	12.0	11.0
11.6	12.5	13.5	14.6	98	14.5	13.3	12.2	11.2
11.8	12.7	13.7	14.9	99	14.8	13.5	12.4	11.4
12.0	12.9	14.0	15.2	100	15.0	13.7	12.6	11.6

Weight-for-Height Look-Up Table Children 24–59 Months

If a child is 2 years of age or older, or if a child is at least 87 cm tall and his/her age is not known, measure standing height. If a child 2 years of age or older or at least 87 cm tall is unable to stand, measure length while the child is lying down (recumbent) and subtract 0.7 cm from the length to arrive at a comparable height. Use the weight-for-height look-up table.

Boys' weight (kg)				Height (cm)	Girls' weight (kg)			
-3 SD	-2 SD	-1 SD	Median		Median	-1 SD	-2 SD	-3 SD
5.9	6.3	6.9	7.4	65	7.2	6.6	6.1	5.6
6.1	6.5	7.1	7.7	66	7.5	6.8	6.3	5.8
6.2	6.7	7.3	7.9	67	7.7	7.0	6.4	5.9
6.4	6.9	7.5	8.1	68	7.9	7.2	6.6	6.1
6.6	7.1	7.7	8.4	69	8.1	7.4	6.8	6.3
6.8	7.3	7.9	8.6	70	8.3	7.6	7.0	6.4
6.9	7.5	8.1	8.8	71	8.5	7.8	7.1	6.6
7.1	7.7	8.3	9.0	72	8.7	8.0	7.3	6.7
7.3	7.9	8.5	9.2	73	8.9	8.1	7.5	6.9
7.4	8.0	8.7	9.4	74	9.1	8.3	7.6	7.0
7.6	8.2	8.9	9.6	75	9.3	8.5	7.8	7.2
7.7	8.4	9.1	9.8	76	9.5	8.7	8.0	7.3
7.9	8.5	9.2	10.0	77	9.6	8.8	8.1	7.5
8.0	8.7	9.4	10.2	78	9.8	9.0	8.3	7.6
8.2	8.8	9.6	10.4	79	10.0	9.2	8.4	7.8
8.3	9.0	9.7	10.6	80	10.2	9.4	8.6	7.9
8.5	9.2	9.9	10.8	81	10.4	9.6	8.8	8.1
8.7	9.3	10.1	11.0	82	10.7	9.8	9.0	8.3
8.8	9.5	10.3	11.2	83	10.9	10.0	9.2	8.5
9.0	9.7	10.5	11.4	84	11.1	10.2	9.4	8.6
9.2	10.0	10.8	11.7	85	11.4	10.4	9.6	8.8
9.4	10.2	11.0	11.9	86	11.6	10.7	9.8	9.0
9.6	10.4	11.2	12.2	87	11.9	10.9	10.0	9.2
9.8	10.6	11.5	12.4	88	12.1	11.1	10.2	9.4
10.0	10.8	11.7	12.6	89	12.4	11.4	10.4	9.6
10.2	11.0	11.9	12.9	90	12.6	11.6	10.6	9.8
10.4	11.2	12.1	13.1	91	12.9	11.8	10.9	10.0
10.6	11.4	12.3	13.4	92	13.1	12.0	11.1	10.2
10.8	11.6	12.6	13.6	93	13.4	12.3	11.3	10.4
11.0	11.8	12.8	13.8	94	13.6	12.5	11.5	10.6

11.1	12.0	13.0	14.1	95	13.9	12.7	11.7	10.8
11.3	12.2	13.2	14.3	96	14.1	12.9	11.9	10.9
11.5	12.4	13.4	14.6	97	14.4	13.2	12.1	11.1
11.7	12.6	13.7	14.8	98	14.7	13.4	12.3	11.3
11.9	12.9	13.9	15.1	99	14.9	13.7	12.5	11.5
12.1	13.1	14.2	15.4	100	15.2	13.9	12.8	11.7
12.3	13.3	14.4	15.6	101	15.5	14.2	13.0	12.0
12.5	13.6	14.7	15.9	102	15.8	14.5	13.3	12.2
12.8	13.8	14.9	16.2	103	16.1	14.7	13.5	12.4
13.0	14.0	15.2	16.5	104	16.4	15.0	13.8	12.6
13.2	14.3	15.5	16.8	105	16.8	15.3	14.0	12.9
13.4	14.5	15.8	17.2	106	17.1	15.6	14.3	13.1
13.7	14.8	16.1	17.5	107	17.5	15.9	14.6	13.4
13.9	15.1	16.4	17.8	108	17.8	16.3	14.9	13.7
14.1	15.3	16.7	18.2	109	18.2	16.6	15.2	13.9
14.4	15.6	17.0	18.5	110	18.6	17.0	15.5	14.2
14.6	15.9	17.3	18.9	111	19.0	17.3	15.8	14.5
14.9	16.2	17.6	19.2	112	19.4	17.7	16.2	14.8
15.2	16.5	18.0	19.6	113	19.8	18.0	16.5	15.1
15.4	16.8	18.3	20.0	114	20.2	18.4	16.8	15.4
15.7	17.1	18.6	20.4	115	20.7	18.8	17.2	15.7
16.0	17.4	19.0	20.8	116	21.1	19.2	17.5	16.0
16.2	17.7	19.3	21.2	117	21.5	19.6	17.8	16.3
16.5	18.0	19.7	21.6	118	22.0	19.9	18.2	16.6
16.8	18.3	20.0	22.0	119	22.4	20.3	18.5	16.9
17.1	18.6	20.4	22.4	120	22.8	20.7	18.9	17.3

Appendix 6. RUTF Look-up Table and Advice

RUTF in IPD-SAM (500 Kcal/92 g sachet)

	Transition 150 Kcal/kg/day	Rehabilitation 200 Kcal/kg/day
Child's weight (kg)	Sachets per Day	Sachets per Day
3.5–3.9	1.2	2
4.0–4.9	1.5	2.5
5.0–6.9	2.1	3
7.0–8.4	2.5	3.5
8.5–9.4	2.8	4
9.5–10.4	3.1	4.5
10.5–11.9	3.6	5
≥ 12	4	2

* Infants above 6 months of age and < 4 kg are treated in IPD-SAM following the treatment protocol for infants under 6 months of age.

RUTF messages

The following messages should be given to the mother or carer when RUTF is introduced in OPD and repeated during follow-up visits:

1. Do not share RUTF. RUTF is a food and medicine for very thin and swollen children only.
2. Give small, regular meals of RUTF and encourage the child to eat often (5–6 meals per day). Your child should have ____ packets per day.
3. Continue to breastfeed regularly (if applicable). Offer breast milk first before every RUTF feed.
4. Offer the child plenty of clean water to drink while he/she is eating RUTF. Children will need more water than normal.
5. Do not give other food. RUTF is the only food apart from breast milk that the ill children need to recover. Other foods, such as homemade foods (use local name or porridge), will be introduced when the child is recovering well.
6. Wash the child's hands and face with soap before feeding if possible. Clean the RUTF package.
7. Keep food clean and covered.

8. Do not stop feeding when a child has diarrhoea. Continue to feed RUTF and (if applicable) breast milk.
9. Keep the child covered and warm.
10. Return to the health facility whenever the child's condition deteriorates or if the child is not eating sufficiently.

Advise the mother or carer to start giving nutritious homemade complementary foods when the child is recovering well, and after the RUTF daily amount is taken.

Appendix 7. F75 Look-up Tables

Volume of F75 for Children with Severe Wasting and Oedema + and ++

Weight of Child (kg)	Volume of F75 per feed (ml) ^a			Daily total (130 ml/kg)	80% of daily total ^a (minimum)
	Every 2 hours ^b (12 feeds)	Every 3 hours ^c (8 feeds)	Every 4 hours (6 feeds)		
2.0	20	30	45	260	210
2.2	25	35	50	286	230
2.4	25	40	55	312	250
2.6	30	45	55	338	265
2.8	30	45	60	364	290
3.0	35	50	65	390	310
3.2	35	55	70	416	335
3.4	35	55	75	442	355
3.6	40	60	80	468	375
3.8	40	60	85	494	395
4.0	45	65	90	520	415
4.2	45	70	90	546	435
4.4	50	70	95	572	460
4.6	50	75	100	598	480
4.8	55	80	105	624	500
5.0	55	80	110	650	520
5.2	55	85	115	676	540
5.4	60	90	120	702	560
5.6	60	90	125	728	580
5.8	65	95	130	754	605
6.0	65	100	130	780	625
6.2	70	100	135	806	645
6.4	70	105	140	832	665
6.6	75	110	145	858	685
6.8	75	110	150	884	705
7.0	75	115	155	910	730
7.2	80	120	160	936	750
7.4	80	120	160	962	770
7.6	85	125	165	988	790

7.8	85	130	170	1014	810
8.0	90	130	175	1040	830
8.2	90	135	180	1066	855
8.4	90	140	185	1092	875
8.6	95	140	190	1118	895
8.8	95	145	195	1144	915
9.0	100	145	200	1170	935
9.2	100	150	200	1196	960
9.4	105	155	205	1222	980
9.6	105	155	210	1248	1000
9.8	110	160	215	1274	1020
10.0	110	160	220	1300	1040

^a Volumes in these columns are rounded to the nearest 5 ml.

^b Feed two-hourly for at least the first day. Then, when the child has little or no vomiting, modest diarrhoea (< 5 watery stools per day), and is finishing most feeds, change to three-hourly feeds.

^c After a day on three-hourly feeds: If no vomiting, less diarrhoea, and finishing most feeds, change to four-hourly feeds.

Volume of F75 for Children with Severe Bilateral Pitting Oedema (+++)

Weight with +++ oedema (kg)	Volume of F75 per feed (ml) ^a			Daily total (100 ml/kg)	80% of daily total ^a (minimum)
	Every 2 hours ^b (12 feeds)	Every 3 hours ^c (8 feeds)	Every 4 hours (6 feeds)		
3.0	25	40	50	300	240
3.2	25	40	55	320	255
3.4	30	45	60	340	270
3.6	30	45	60	360	290
3.8	30	50	65	380	305
4.0	35	50	65	400	320
4.2	35	55	70	420	335
4.4	35	55	75	440	350
4.6	40	60	75	460	370
4.8	40	60	80	480	385
5.0	40	65	85	500	400
5.2	45	65	85	520	415
5.4	45	70	90	540	430
5.6	45	70	95	560	450
5.8	50	75	95	580	465
6.0	50	75	100	600	480
6.2	50	80	105	620	495
6.4	55	80	105	640	510
6.6	55	85	110	660	530
6.8	55	85	115	680	545
7.0	60	90	115	700	560
7.2	60	90	120	720	575
7.4	60	95	125	740	590
7.6	65	95	125	760	610
7.8	65	100	130	780	625
8.0	65	100	135	800	640
8.2	70	105	135	820	655
8.4	70	105	140	840	670
8.6	70	110	145	860	690
8.8	75	110	145	880	705
9.0	75	115	150	900	720
9.2	75	115	155	920	735

9.4	80	120	155	940	750
9.6	80	120	160	960	770
9.8	80	125	165	980	785
10.0	85	125	165	1000	800
10.2	85	130	170	1020	815
10.4	85	130	175	1040	830
10.6	90	135	175	1060	850
10.8	90	135	180	1080	865
11.0	90	140	185	1100	880
11.2	95	140	185	1120	895
11.4	95	145	190	1140	910
11.6	95	145	195	1160	930
11.8	100	150	195	1180	945
12.0	100	150	200	1200	960

^a Volumes in these columns are rounded to the nearest 5 ml.

^b Feed two-hourly for at least the first day. Then, when the child has little or no vomiting, modest diarrhoea (< 5 watery stools per day), and is finishing most feeds, change to three-hourly feeds.

^c After a day on three-hourly feeds: If no vomiting, less diarrhoea, and finishing most feeds, change to four-hourly feeds.

Appendix 8. Therapeutic Feeding F100 Look-up Table

Range of Volumes for Free-Feeding With F100

Weight of Child (kg)	Range of volumes per four-hourly feed of F100 (6 feeds daily)		Range of daily volumes of F100	
	Minimum (ml)	Maximum (ml) ^a	Minimum (150 ml/kg/day)	Maximum (220 ml/kg/day)
2.0	50	75	300	440
2.2	55	80	330	484
2.4	60	90	360	528
2.6	65	95	390	572
2.8	70	105	420	616
3.0	75	110	450	660
3.2	80	115	480	704
3.4	85	125	510	748
3.6	90	130	540	792
3.8	95	140	570	836
4.0	100	145	600	880
4.2	105	155	630	924
4.4	110	160	660	968
4.6	115	170	690	1012
4.8	120	175	720	1056
5.0	125	185	750	1100
5.2	130	190	780	1144
5.4	135	200	810	1188
5.6	140	205	840	1232
5.8	145	215	870	1276
6.0	150	220	900	1320
6.2	155	230	930	1364
6.4	160	235	960	1408
6.6	165	240	990	1452
6.8	170	250	1020	1496
7.0	175	255	1050	1540

7.2	180	265	1080	1588
7.4	185	270	1110	1628
7.6	190	280	1140	1672
7.8	195	285	1170	1716
8.0	200	295	1200	1760
8.2	205	300	1230	1804
8.4	210	310	1260	1848
8.6	215	315	1290	1892
8.8	220	325	1320	1936
9.0	225	330	1350	1980
9.2	230	335	1380	2024
9.4	235	345	1410	2068
9.6	240	350	1440	2112
9.8	245	360	1470	2156
10.0	250	365	1500	2200

^a Volumes per feed are rounded to the nearest 5 ml.

Appendix 9. Therapeutic Feeding Look-Up Tables for Infants under 6 Months of Age

Look-up table for amounts of supplements of formula milk, F100-Diluted (severe wasting) or F75 (bilateral pitting oedema) for breastfed infants

Infant's weight (kg)	Formula milk, F100-Diluted (or F75 in case of oedema) (ml per feed if 12 feeds per day)	Formula milk, F100-Diluted (or F75 in case of oedema) (ml per feed if 8 feeds per day)
< 1.3	20	25
1.3–1.5	25	30
1.6–1.8	30	35
1.9–2.1	30	40
2.2–2.4	35	45
2.5–2.7	40	50
2.8–2.9	40	55
3.0–3.4	45	60
3.5–3.9	50	65
4.0–4.4	50	70

Look-up table for amounts of formula milk, F100-Diluted (severe wasting) or F75 (bilateral pitting oedema) for non-breastfed infants in stabilisation

Infant's weight (kg)	Formula milk, F100-Diluted (or F75 in case of oedema) (ml per feed if 12 feeds per day)	Formula milk, F100-Diluted (or F75 in case of oedema) (ml per feed if 8 feeds per day)
< 1.3	20	25
1.3–1.5	25	30
1.6–1.8	30	35
1.9–2.1	30	40
2.2–2.4	35	45
2.5–2.7	40	50
2.8–2.9	40	55

3.0–3.4	45	60
3.5–3.9	50	65
4.0–4.4	50	70

Look-up table for amounts of formula milk, F100-Diluted (severe wasting) or F75 (bilateral pitting oedema) for non-breastfed infants in transition and stabilisation

Infant's Weight (kg)	Transition Formula milk, F100-Diluted (ml per feed if 8 feeds per day)	Rehabilitation Formula milk, F100-Diluted (ml per feed if 6–8 feeds per day)
< 1.6	45	60
1.3–1.5	53	70
1.6–1.8	60	80
1.9–2.1	68	90
2.2–2.4	75	100
2.5–2.7	83	110
2.8–2.9	90	120
3.0–3.4	96	130
3.5–3.9	105	140

Appendix 10. Minimum Materials for OPD-MAM/SAM

The materials listed here suggest a start-up quantity for the daily treatment in OPD-MAM/SAM of on average **10 children with MAM or SAM** for a period of **3 months**. Needs per site may be adjusted according to current and projected caseload. Always check the health facility's drug and equipment list to identify items that are needed in addition to their regular supply.

MEDICINES AND DRESSING

Item	Quantity	Unit
Amoxicillin 250 mg	750	tabs
Cotrimoxazole 120 mg	75	tabs
Mebendazole 100 mg	100	tabs
Paracheck	30	test
ACT	50	treatment dose
Metronidazole 250 mg	50	tabs
Nystatin 100,000 IU	50	tabs
Paracetamol 100 mg	50	tabs
Benzyl benzoate 90% 1L	0.5	L
Tetracycline HCl 1% eye ointment 5 g	30	tubes
Witfields ointment	30	tubes
Gentian violet crystals 25 g	1	pot of 25 g
Zinc oxide 10% ointment	1	tube of 100 g
Nystatin ointment 100,000 IU/g	25	tube of 30 g
Betadine solution	2	bottle
Cotton wool	3	Rolls
Examination gloves, medium, disposable	30	pieces
Bags for medicines	50	pieces
Thermometer	10	pieces
Gauze	20	packets
Small bandage	10	pieces
Tape	2	pieces
Normal saline for wounds 100 ml	5	pieces

Dressing scissors 2 pieces

EQUIPMENT

Item	Quantity
OPD-MAM/SAM records	100
Markers, pens	2
Clipboards	2
Stapler and box of staples	1
Pens	few
Scissors	1 pair
Notebook	1
Calculator	1
Small clock with second hand	1
Bucket with lid	2
Soap for hand washing	3 bars
Small bowl	1
Small jug	1
Hand towels	2
Water jug (with lid)	2
Plastic cups	20
Metal spoons	2
Teaspoons or medicine cups	6
Thermometer	5
Salter scale (25 kg) plus weighing pants	1
Uniscale	1
Height board	1
MUAC tape	10
Nail clippers	1

SUPPLIES TO KEEP IN STOCK

Item	Quantity
Bags for carrying RUTF (if required)	50
Drinking water	1 jerry can
Sugar to make 10% sugar solution	500 g
Soap for distribution	20 bars

RUTF

Monthly calculation:

Number of beneficiaries (A)

Monthly sachet consumption per child 80 (for 20 sachets per child per week)

Monthly carton consumption: $A \times 80/150$ (for 150 sachets in one carton)

RUSF

Monthly calculation:

Number of beneficiaries (A)

Monthly sachet consumption per child 28 (for 7 sachets per child per week)

Monthly carton consumption: $A \times 28/150$ (for 150 sachets in one carton)

SuperCereal

Monthly calculation:

Number of beneficiaries (A)

Monthly amount per PLW 7.5 kg

Monthly amount per site: $A \times 7.5$ kg

Appendix 11. Minimum Materials for IPD-SAM

Medicines		Equipment	
Cap	Vitamin A 200,000 IU	Stethoscope	
Tab	Folic Acid, 5mg	Sphangomanometer (children)	
Tab	Ferrous Sulphate, 60mg	Otoscope (children)	
Susp	Amoxicillin 250mg	Thermometer for patient	
Susp	Cotrimoxazol	Thermometer for ward	
Vial	Ampicillin , 500mg	Safety box	
Vial	Ceftriaxone 1gr	Scissor medium size	
Amp	Gentamycin 40mg	Nasogastric tube 6-8 gage	
Susp	Ciprofloxacin	Mask and Ambubag (children)	
Susp	Nalidexic acide 250mg	IV Canola 24	
Susp	Metronidazol 200mg	Syringes 2 ml, 5 ml and 10 ml	
Amp	Magnesium Sulphate 50%	Gloves 7 & 7.5	
Amp	Furosemide 10mg	Forceps	
Serum	Dextrose 5% 500ml	Baby weighing scale	
Serum	Ringer 500ml	Height measuring board	
Serum	Normal saline 500ml	MUAC Tape	
Syrup	Paracetamol 125mg	Uniscale, electronic weighing scale	
Amp	Digoxine		
Amp	Adrenaline 1mg/1ml	Kitchen utensils	
Amp	Calcium Gluconat 10ml	Cooking pot 10 liter	
Amp	Aminoghyllin 250mg	Bucket (food proof plastic)	
Amp	Water for injection 5cc.	Water flask 50 liter	
Vial	Glucose 50% 50cc	Cups and plate ceramic high quality	
Skin oint	Nystatine	Ladle stainless steel	
Eye oint	Tetracyclin	Measuring Jugs 1liter, 2 liter	
Eye drop	Atropin	Serving spoon stainless steel	
Eye drop	Chloraphenicol	Scale Kitchen Type	
Solution	Povidon iodine (500ml)	Hand mixer	
Solution	Gention violet 25 gr	Brush	
Solution	Zinc Oxide 0.1%	Aprons for children	
Sachet	ReSoMal	Aprons for cook	
Sachet	RUTF	Juice blender	
Tin	F75	Serving bowls	
Tin	F100	Cup stainless steel	
Psychosocial activities items		Refrigerator 16 f	
Sewing machine for mothers		Electronic kettle	
Washable toys for children			

FORM 1. CHILD NUTRITION TRACKING REGISTER

	Islamic Republic of Afghanistan Ministry of Public Health G. D. Preventive medicines Public Nutrition Directorate	
COMMUNITY BASED NUTRITION PROGRAMME CHILD NUTRITION TRACKING REGISTER		
		
Name of Province	:	_____
Name of District	:	_____
Name of Health Facility	:	_____
Type of Health Facility	:	_____
Health Facility Code	:	_____
Name of the Health Post	:	_____
Names of CHSs	:	1. _____ 2. _____
Names of CHWs	:	1. _____ 2. _____

CHILD WEIGHING TRACKING SHEET

Name of the child:					Date of birth:					
Father's Name:					House No:					
Date of weighing	Weight of the child	Nutritional status			Action agreed upon			Action practiced or not		
										

FORM 2. OPD-MAM, OPD-SAM, IPD-SAM REGISTER



Ministry of Public Health

General Directorate of Preventive Medicine

Public Nutrition Department

Province:

District:

HF Name and type:

HF code:

Type of service: OPD-MAM, OPD-SAM, IPD-SAM

Acute Malnutrition Register Book for Children

Registration number	General information								Admission criteria					Type of admission				
	Child Name	F/Name	Sex	Age (M)	Date of admission	Address (village, Street)	Home/ Father phone number	Weight (kg)	Height (cm)	OPD-MAM		OPD-SAM/IPD-SAM			OPD-MAM		OPD-SAM/IPD-SAM	
										MUAC< 125- 115 mm	WHZ< -2	Odema (0,+,++,+++)	MUAC< 115 mm	WHZ< -3	New case	Return defaulter	Refer from other OPD-MAM	New case

1	Awrangzaib	Akram Khan	M	26	12.12.2017	speen kalay, Mia dera	077xxxxxx	5,3	84		112.0				<-3	yes	0.0	0.0			
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					



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

Province:

District:

HF Name and type

HF Code:

Acute Malnutrition Register Book for Children

Type of service: OPD-MAM, OPD-SAM, IPD-SAM

General information							End of treatment					Stay and weight gain			Remarks
Date	Age (M)	Odema (0,+,++,+++)	MUAC mm	Weight (kg)	Height (cm)	WHZ	Cured	Default	Death	Refer/ Transfer out	Non-cured	Total stay/Day	Wigh gain during stay (gr)	Average weight gain	

FORM 3. OPD-MAM FOR PLW REGISTER



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

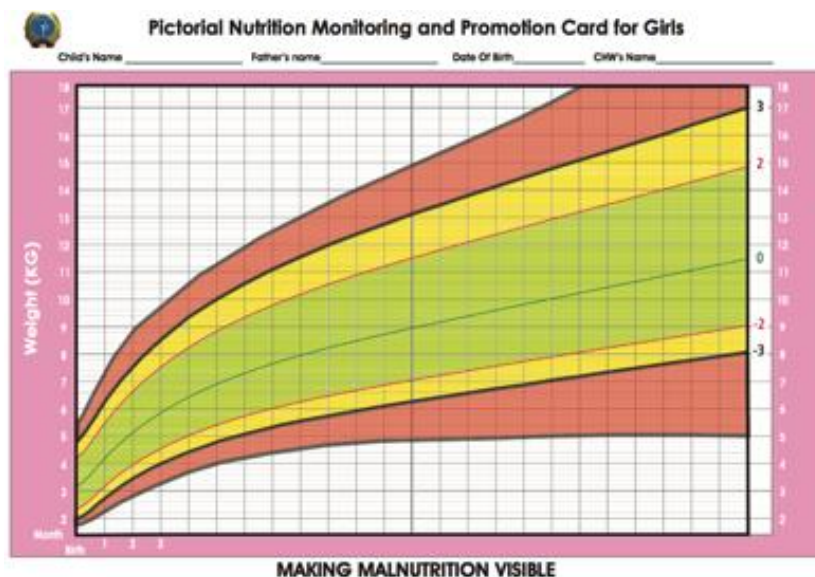
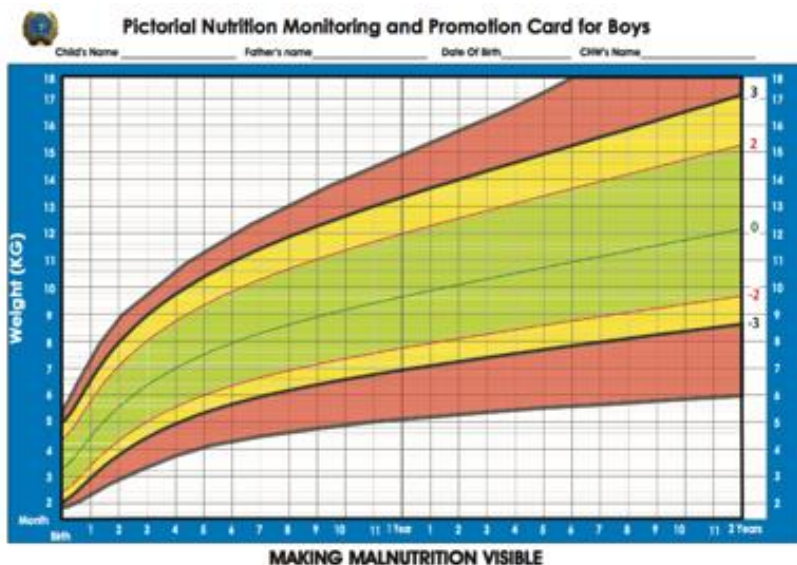
OPD-AM-PLW Registration Book for Acute Malnourished Pregnant and Lactating Women

Province Name: District Name: HF Name and Type: Implementing Agency مؤسسه تطبیق کننده HF code:

Registration number	Name	Husband Name	Address	PW/LW	Pregnancy or Lactation Months	Age	Type of admission			Admission		Distribution-2		Distribution-3		Distribution-...		
							New case	Return defaulter	Transfer in/ refer in	Date	MUAC	Date	MUAC	Date	MUAC	Date	MUAC	

FORM 4. PICTORIAL NUTRITION PROMOTION AND MONITORING CARD

[illegible]



The blue card is for boys, and a pink card is for girls.

FORM 6. OPD-MAM/SAM RECORD

 Ministry of Public Health General Directorate of Preventive Medicine Public Nutrition Directorate									
Acute Malnutrition treatment card for children									
Province				District				Village	
Type of service	OPD-SAM	OPD-MAM		HF Name				Registration Number	
Full Name				Age				Sex	
Father Name				Phone number				Admission date	
Admission criteria									
For OPD-MAM	Put sign off (✓) in one of the box			MUAC			WHZ		
For OPD-SAM	Oedema (0, +, ++, +++)						WHZ		
Type of Admission				New	Return defaulter	Refer in			Transfer in
					From OP-MAM	From OPD-SAM	From IPD-SAM		
Weight (Kg)		Height (cm)		WHZ	MUAC (cm)				
Routine drugs and vaccination									
Drug	Date	Dosage	Drug	Date	Dosage				
Amoxicillin			Mebendazole						
Measles Vaccination	yes	No	Remarks:						

Follow up visits												
Week	ADM.	2	3	4	5	6	7	8	9	10	11	12
Date												
Progress												
Weight (kg)												
Weight change (+, 0, -)												
Height (cm)												
WHZ												
MUAC (cm)												
Oedema (+, ++, +++)												
Medical history												
Diarrhoea												
Vomiting												
Fever												
Cough												
Physical examination												
Appetite test (good, poor)												
# of RUTF/RUSF sachets												
Name of Examiner												
Remarks :												

کارت تدایوی داخل بستر طفل سو تغذی حاد شدید
IPD-SAM DAILY CARE CARD

تعمیر و تعمیر

نام و نام خانوادگی :	تاریخ بستاری :	جنس (مذکر/انثیه) : دکتر	بیمار	بیماری
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DAILY CARE (مراقبت روزانه)

[illegible][illegible]

شماره ثبت :

تاریخچه طبعی (حلقه نمایی)		معلومات زمان بستری	
نام تسهیل صحنی :	تاریخ بستری :	اشتها طبعی : نورمال	خواب : استراحت : بلی اخیر
نام طبعی :	نام طبعی طبعی :	اسهال : بلی اخیر	اگر دارد چند بار در روز
تاریخ تولد طبعی :	سن طبعی :	خیزا هورمون چشما : بلی اخیر	تغذیه ادرار : بلی اخیر
جایس (مخته نمایی) : شکر	پسر	نسب : بلی اخیر	تغذیه موم : بلی اخیر
مراقبت کننده طبعی (حلقه نمایی) :	مادر پدر	سرفه : بلی اخیر	نفس کوتاهی : بلی اخیر
آدمش :		شب گوی : بلی اخیر	پروازت میخایی : بلی اخیر
مستقره یاقوتی :			

[illegible]

1. منجمنت ابتدایی (INITIAL MANAGEMENT)

[illegible][illegible]

[illegible]



کارت تدایوی داخل بستر طفل سو تغذی حاد شدید
IPD-SAM DAILY CARE CARD

تعمیراتی

نام و نام خانوادگی :	تاریخ پستی :	جنس (حالت نامزدی) :	پسر	سن ملات :
نام ملات :	نام پدر :	نام ملات :		

DAILY CARE (مراقبت روزانه)

[illegible][illegible]

WEIGHT CHART (چارت وزن)

COMMENTS /OUTCOMES (نظريات /نتائج)

PATIENT OUTCOME (End of treatment) نتيجة مريض

214

FORM 8. OPD-MAM FOR PLW RECORD



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

AM-PLWs treatment card													
General information													
Province						District							
HF Name						HF type							
Target Group (mark)	☐ Pregnant ☐ Lactating					Registration number							
Identification of beneficiary													
Name:						MCH-ANC/PNC card #							
Husband's name						Age of women:							
Address/village													
Admission criteria	MUAC (mm)					Admission date							
Admission type													
☐ New case ☐ Return defaulter ☐ Transferred in													
IFA supplementation	Make sure that mother get IFA from MCH section. use (✓)												
	1	2	3	4	5	6	7	8	9	10	11	12	
In each visit													
Other medications:			Details and Date:										
End of treatment information:					Date:								
Exit as:	Mark outcome: Cured Default Died Non-cured Referred/tra												
MUAC (mm)													

FORM 9. SCREENING TALLY SHEET

Tally Sheet for Recording Children under 5 Years of Age Screened in Health Facilities and Referred by Community Health Workers

Days of Week	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Total
Total children Screened (Edema, MUAC, WHZ)							
Children with normal Anthropometry (referred back to home)							
MAM children (L, MUAC < 125 mm and ≥ 15 mm or WHZ < -2 ≥ -3)							
SAM children (L, Edema, MUAC < 115 mm or WHZ < -3)							
Total children screened and referred by CHWs							
Children screened by CHWs							
Children with normal Anthropometry							
Children detected with malnutrition Edema or MUAC < 125 mm							

FORM 10. CBNP MONTHLY HEALTH POST PICTORIAL MONITORING REPORT

**Community Base Nutrition Programme
Monthly Health Post Pictorial Monitoring Report**
For the Month of _____

Province: _____ District: _____ Village: _____
Name of HP: _____ Name of CHW 1: _____ CHW 2: _____

S. No	Activities	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
1	 Total number of children registered												
2	 Number of new children registered												
3	 Number of children weighed during this month												
4	 Number of children in Green zone												
5	 Number of Children in yellow zone												
6	 Number of children in red zone												
7	 Number of home visits made												
8	 Number of families counselled during the month												
9	 Number of Deliveries during the month												
10	 Number of Nutrition Education sessions held in the community												
11	 Number of sessions conducted in health facility												
12	 Number of Cooking Demonstration sessions held												
13	 Number of children referred to the health facility												

Signature of CHW 1 _____
CHW 2 _____

Date: _____

FORM 11. PICTORIAL MONITORING REPORT FOR COMMUNITY HEALTH SUPERVISORS

**Community Based Nutrition Programme
Public Nutrition Department, Ministry of Public Health**

CBNP Monitoring Report for Community Health Supervisors

Province: District:
Name of Health Facility: Code of Health Facility:

Report for the month of

Sl. No	Description	HP 1	HP 2	HP 3	HP 4	HP 5	HP 6	HP 7	HP 8	HP 9	HP 10	HP 11	HP 12
1	No: of children registered												
2	No: of children weighed												
3	No: of children newly added												
4	No: of children who have moved out												
3	No: of children in green zone												
4	No: of children in yellow zone												
5	No: of children in red zone												
6	No: of deliveries during the month												
7	No: of home visits made												
8	No: of Nutrition Education sessions held in the community												
9	No: of Nutrition Education sessions held in the HP												
10	No: of cooking demonstrations conducted												
11	No: of mothers participated in the cooking demonstrations												
12	No: of referral cases sent to HF												
13	No: of Shura meetings held												

Remarks, if any:

Signature of the CHS: _____
Name of the CHS: _____ Date of submission: _____

FORM 12. IPD-SAM MONTHLY REPORTING FORM

Province	
District	
Implementing Agency	
Type of program	
Level	



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

Management of Severe Acute Malnutrition Programme

HF Name	
Facility Code	
Prepared by	
Month/Year	

Monthly Reporting Format

Age Group	Total at the beginning of month (A)	New Admission						Refer in			Total Refer in	Total Admissions (B)	End of treatment						Total at end of month (D)
		Oedema	WHZ <-3	MUAC <115 mm	Male	Female	Total	From IPD-SAM/OPD-SAM	From OPD-MAM	Return Default			Cured	Death	Defaulters	Refer Out	Non Cured	Total Exits (C)	
< 6 Month							0				0	0						0	0

6-23 Months							0					0	0					0	0
24-59 Months							0					0	0					0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cured, Death ,Default,Non Cured and Transfer Rates													#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Standard (Sphere)										IPD-SAM		>75%	<10%	<15%					

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

	Kwashiorkor	Marasmus
Average Weight Gain (AWG)		
Average Length of Stay (ALS)		

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

Supply stock report and balance

FORM 13. OPD-SAM MONTHLY REPORTING FORM

Province	
District	
Implementing Agency	
Type of program	
Level	



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

Management of Severe Acute Malnutrition Programme

HF Name	
Facility Code	
Prepared by	
Month/Year	

Monthly Reporting Format

Age Group	Total at the beginning of month (A)	New Admission						Refer in			Total Refer in	Total Admissions (B)	End of treatment						Total at end of month (D)
		Oedema	WHZ <-3	MUAC <115 mm	Male	Female	Total	From IPD-SAM/OPD-SAM	From OPD-MAM	Return Default			Cured	Death	Defaulters	Refer Out	Non Cured	Total Exits (C)	

children<6 months						0				0	0						0	0
6-23 months						0				0	0						0	0
24-59 months						0				0	0						0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cured, Death ,Default,Non Cured and Transfer Rates												#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI	#DIV/OI		
Standard (Sphere)										OPD-SAM	>75%	<10%	<15%					

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

	Kwashiorkor	Marasmu s
Average Weight Gain (AWG)		
Average Length of Stay (ALS)		

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

Supply stock report and balance

FORM 14. OPD-MAM MONTHLY REPORTING FORM

Province	
District	
Implementing Agency	
Project start date	



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

OPD-MAM & OPD-AM PLW

Monthly Reporting Format

HF Name	
Facility Code	
Month/Year	
FLA #	
FRN #	

Beneficiaries	Total at the beginning of the month (A)	New Admissions						Refer-in	Total Admission (B)	End of treatment						Total food recipients (D)	Total at the end of the month (E)
		WHZ <-2 to ≥-3	MUAC <125mm ≥ 125mm	MUAC < 230mm	Male	Female	Total			Cured	Deaths	Defaulter	Refer Out	Non-Cured	Total Exits (C)		
Children 6-23 months				NA			0		0						0	#REF!	0
Children 24-59 months				NA			0		0						0	#REF!	0
Pregnant women		NA	NA			NA	0		0						0	#REF!	0
Lactating women		NA	NA			NA	0		0						0	#REF!	0

GRAND TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#REF!	0
Performance indicators									MAM-CH	#DIV/0!	#DIV/0!	#DIV/0!	0	#DIV/0!	0	#REF!	0	
									AM-PLW	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	
									SPHERE Standards	>75%	<3%	<15%	0	0	0	0	0	
Average length-of-stay (ALS*) for children only				Average Weight Gain (AWG**) for children only				E = (A + B) - C										
				Food stock report and balance (Kg)														
ALS* = sum of length-of-stay (in days) of all children discharged cured during the month / total # of children discharged cured during the month AWG** = sum of all weight gains (grams/kg/day) during the month / total # of children discharged cured during the month Weight gain = (discharge weight in grams - admission weight in grams)/admission weight (in kg)/total length of stay in days Remarks:								Food item	Opening balance	Quantity Received	Quantity Distributed	Quantity transfer-out***	Losses	Quantity returned	Closing Balance	Expected recipients next month	Quantity needed next month	
								Super cereal	Super cereal						#REF!		#REF!	
								RUSF	RUSF						#REF!		#REF!	
								Total	0	0.0	0.0	0.0	0.0	0.0	#REF!	0.0	#REF!	

***Quantity transfer out = food transferred from one program site to another

FORM 15. BNA QUESTIONS MONTHLY REPORTING FORM

Province		 Ministry of Public Health General Directorate of Preventive Medicine Public Nutrition Department	HF Name	
District			Health Facility Code	
Implementing Agency			Report prepared by	
Type of program			Month/Year	

In SAM inpatient form:	
1 - How many weeks did the site encountered stock out of RUTF	0
2 - Number of new admissions referred by CHWs	0
In SAM outpatient form:	
1 - How many weeks did the site encountered stock out of RUTF	0
2 - Number of new admissions referred by CHWs	0
In MAM form:	
1 - How many weeks did the site encountered stock out of RUSF	0
2 - Number of new admissions referred by CHWs	0
Screening	
How many children Under 5 years and PLW screened during the month at the health Facility?	
1- Girls	0
2- Boys	0
3- PLW	0

FORM 16. COMMUNITY HEALTH WORKER REFERRAL SLIP

Name of CHW.....Health Post Name/Code #.....
 Village Name.....

Serial No.

For patient to carry to clinic Date: / / referral slip of CHW

Malaria	Respiratory infection	Diarrhea	TB	Vaccine	Malnutrition	Antenatal care	Normal delivery	Delivery complication	Postnatal care	Vaccine
										
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

FORM 17. HEALTH FACILITY REFERRAL SLIP



Ministry of Public Health
General Directorate of Curative Medicine



Referral Slip

A	Patient Specification:	Current address:
	Name and last Name:	Sex:
	Birth date/Age:	
B	Name of HF refer the patient:	Address of Hospital:
	Date:	Referral time:
	Name of person who refer the patient:	Phone #:
	Email address:	Patient registration #:
	Is there need for ambulance Yes No	
	Name of HF get the referral:	Phone #:
	Address:	Date of referral
		Time of referral
	Level of emergency for referral:	
	Immediate (within 8 hours) Emergency (within 24 hours) Routine case (2 days to 2 weeks)	
	General information (chief complaint, clinical findings, laboratory findings and primary diagnosis)	
	Previous history:	
	History of drug sensitivity:	
	Reasons for referral:	
	Name of doctor..... Signature..... Date: / /	
	Do you send the patient treatment record along with this referral slip? Yes: No:	

FORM 18. HOME VISIT QUESTIONNAIRE



Questionnaire for Home Visit

1. When was your child enrolled in the treatment? _____
2. How did you know that your child needed treatment? _____
3. Has the care and advice you received at the health facility been satisfactory and sufficient to care for your child at home?

4. If the child is not responding well to the treatment: Could you apply the advice you received at the health facility? What has been difficult for you as carer?

5. If the child defaulted: Why did you stop taking your child to the health facility for treatment)? (List reasons):

6. Would you return your child to the health facility to continue treatment? Yes/No
If no, why not? _____
7. If the child died, what was the perceived cause of death> _____

FORM 19. PRESCRIPTION CARD



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

IMAM prescription card for children and PLWs					
Name:		Age		Province	
F/H/Name		Sex		District	
HF Name		Registration #		Village	
Type of service:	OPD-MAM		OPD-SAM		
Commodities Specification: RUSF: RUTF: Super Cereal:					
Visit #	Date	Type of ration	Quantity of ration	Date of next visit	Signature
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

FORM 20. HEALTH FACILITY SUPERVISORY CHECKLISTS



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

Monitoring Checklist for nutrition activities in Health Facilities

Identification				
q1	Date: Year () / Month () / Day ()			
q2	Location: Province () / District ()			
q3	Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other (), HF ID: _____			
SN	Questions	Answers	Remarks	Comments
q4	Is there staff who received training on IYCF counseling?	1. No 2. Yes (but not present) 3. Yes (present)	A trained IYCF counselor should have received one week training on IYCF counseling skills.	
q5	Is there IEC materials available/ visible on nutrition topics?	1. No 2. Yes but not for all topics, 3. Yes for all	Including posters visible to all, brochures to be distributed,	
q6	Average number of Breastfeeding counseling/ day during the last month:	_____		
q7	Do the children and mothers receive micronutrient supplements registered and recorded correctly	1. No 2. Yes, not properly 3. Yes, properly		
q8	Average number of Severe Acute Malnutrition and Moderate Acute Malnutrition admission/ day during the last month:	_____ SAM _____ MAM		

Integrated Management of Acute Malnutrition Operational Guide

q9	Is there enough therapeutic food available to treat severely malnourished children?	1. No 2. Yes, but not enough, 3. Yes, enough		
q10	Do the staff measure weight and height of children correctly?	1.No do not measure at all 2. Yes, but not correctly, 3. Yes		
q11	Is there the flow chart of operational guideline of management of acute malnutrition visible in the wall?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: Visible, readable,	
q12	Are the Midwives prescribe Iron Folic Acid supplementation for pregnant and post partum women appropriately ?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: for children > 6 M 20 mg/day for 10 days. and for children < 6M 10 mg/day for 10 days.	
q13	Are the Doctors prescribe Zinc+ ORS for children with diarrhea cases appropriately ?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: Iron & Folic Acid (60mg+400mic) a Tablet/day	

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:



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

Monitoring Checklist for the Public Nutrition Trainings				
Identification				
q1	Date: Year ()/ Month ()/ Day ()			
q2	Location: Province ()/ District ()/ Training Center ()			
q3	Title of Training: 1) Nutrition Training for MD, 2) Nutrition Training for Nurse and Midwife, 3) Nutrition Training for Supervisor, 4) Nutrition Training for CHS, 5) Nutrition Training for CHW, 6) IPD-SAM Training, 7) NiE Training, 8) SMART Training, 9) RNA Training, 10) Others _____			
q4	Type of Training: 1. Initial, 2. Refresher, 3. TOT			
q5	Date of Training: ../ ../ ..			
q6	Supported by: _____			
q7	Conducted by: _____			
q8	Number of Participants: _____			
q9	Number of Facilitators: _____			
SN	Questions	Answers	Remarks	Comments
Pre Training:				

q10	Does the training Planned based on Training Need Assessment (TNA)?	1. No 2. Yes	Based on Training Need Assessment	
q11	Does the training plan shared and approved by MoPH/ PND?	1. No 2. Yes	Training Micro-Plan According ot PND's Format	
q12	Does the training coordinated and communicated with PPHD?	1. No 2. Yes	Required to be advanced communicated and coordinated with PPHD	
During the Training:				
q13	Is there appropriate training center available for the training?	1. No 2. Yes		
q14	Are the training required equipment available?	1. No 2. Yes, not complete 3. Yes, complete	Required Equipment: Laptop, Projector, Screen, Pointer, Marker, Flipchart, Stand, Printer, Stabler (pin), Camera, (and any other materials based on training title)	
q15	Are the training required materials according to the training session plan available?	1. No 2. Yes, not complete 3. Yes, complete	Required Materials: IYCF Toys, food demonstration materials, milk preparation materials, MUAC, Z-Score Tables, Hieght board and etc...	
q16	Are there training materials including training manual (SOP), and stationary available for the participants?	1. No 2. Yes, only training manual (SOP) 3. Yes, only stationary	Stationary: Bag or file holder, Note book, Pen, Pencil, Sharpener, Rubber, Highlighter	

q17	Is there registration sheet, attendance sheet and schedule available and follow regularly?	1. Yes 2. Only Schedule 3. Only Registration 4. Only Attendance Sheet		
q18	Are there adequate number of participants and facilitators in the class?	1. No 2. Yes, only participants 3. Yes, only facilitators 4. Yes, participants and facilitators	Adequate number of Participants: 20-30 Participants per Class Adequate number of Facilitators: 2-4 Facilitators per class	
q19	Do the sessions follow the schedule correctly?	1. No 2. Yes		
q20	Do the facilitators follow the training methodology according to the facilitator's guideline appropriately?	1. No 2. Yes		
q21	Are the facilitators able to facilitate the sessions appropriately?	1. No 2. Yes	1. Technical Explanation of sessions 2. Time Management 3. Self trust 4. Control of Class	
q22	Did they conduct the field visit for practical work?	1. No 2. Yes	Practical work according to the facilitator guideline in the health facility	
q23	Do the participants met the pre and posttest?	1. No 2. Yes		
q24	Does the per diem and transportation cost meet the training budget plan?	1. No 2. Yes		
q25	Do they distribute the certificates for the participants?	1. No 2. Yes		

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q26	Do they add the serial number for the certificates>	1. No 2. Yes		
Post Training:				
q27	Was there a significant changes considered from pre-test to post-test.		Compare average percentage of pre-test with post-test	
q28	Do they send the training report for MoPH/ PND?	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 person:

Name/ Signature:

Position:



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

Monitoring Checklist for Inpatient Department of Severe Acute Malnutrition (IPD-SAM)				
Identification				
q1	Date: Year () / Month () / Day ()			
q2	Location: Province () / District ()			
q3	Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other (), HF ID: _____			
SN	Questions	Answers	Remarks	Comments
Input indicators				
q4	Are there adequate staff for the IPD-SAM?	1. No 2. Yes	0 doctor, 2 nurse, 1 cleaner/ cook at all time	
q5	Have Health facility staff received training on management of severe acute malnutrition?	1. No 2. Yes, but not certificate 3. Yes, certificate	One week standard training according to MoPH guideline	
q6	Is there at least one copy accessible MoPH guidelines on management of	1. No 2. Yes		

	severe acute malnutrition?			
q7	Are there IEC materials (posters, take-home brochures, flipcharts) on management of severe malnutrition available in the HF?	1. No 2. Yes, not appropriate/Adequate 3. Yes, appropriate/Adequate	Appropriate: Visible, readable, Adequate: enough for distribution(based on case load)	
q8	Are there adequate number of forms and formats necessary for MSM?	1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete	TSS, MSS, home treatment card, Follow up card, register book, W/H table (z-score),	
q9	Is there the flow chart of operational guideline visible in the wall?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: Visible, readable,	
q10	Are there adequate equipment for the center?	1. No 2. Yes, not adequate/complete* 3. Yes, 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. No2. 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 appropriate 3. Yes appropriate		
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 up...)	
q18	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		
q19	Are the rooms' temperature adequate for malnourished children?	1. No 2. Yes	27-30 oC	
q20	Are children weight and height measured and interpreted correctly?	1. No 2. Yes	According to z-score table	
q21	Is therapeutic milk prepared properly(based on protocol)?	1. No2. Yes	Properly: Measurements correct, dishes clean, safe water, ingredients available	
q22	Are children fed according to the schedule and recorded correctly?	1. No 2. Yes, feeding or recording not correct 3. Yes, feeding and recording correct	According to the patients file	
q23	Are the staff able to wash their hands with water and soap?	1. No 2. Yes	Availability,soap,water,sink, clean towel,	
q24	Do the children have access to adequately equipped play room?	1. No 2. Yes appropriate, no enough toys 3. Yes appropriate, enough toys		
q25	Are mothers able to wash their hands with soap and water?	1. No 2. Yes		
Output				

Integrated Management of Acute Malnutrition Operational Guide

q26	Check the registers for:			
a	Average number of admission/ day during the last month:	_____		
b	Correct registration of clients according to the standard form	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: clear, filling all required fields	
c	Cure rate:	_____		
d	Length of stay	_____		
e	Defaulter rate	_____		
q27	Are children's filing system completed correctly?	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:



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

Monitoring Checklist for Outpatient Department of Severe Acute Malnutrition (OPD-SAM)

Identification				
q1	Date: Year () / Month () / Day ()			
q2	Location: Province () / District ()			
q3	Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other (), HF ID: _____			
SN	Questions	Answers	Remarks	Comments
Input indicators				
q4	Are there adequate staff for the OPD-SAM?	1. No 2. Yes	0 doctor, 1 nurse, 1 cleaner	
q5	Have Health facility staff received training on management of severe acute malnutrition?	1. No 2. Yes, but not certificate 3. Yes, certificate	One week standard training according to MoPH guideline	
q6	Is there at least one copy accessible MoPH guidelines on management of severe acute malnutrition?	1. No 2. Yes		

Integrated Management of Acute Malnutrition Operational Guide

q7	Are there IEC materials (posters, take-home-brochures, flipcharts) on management of severe malnutrition available in the HF?	1. No 2. Yes, not appropriate/Adequate 3. Yes, appropriate/ Adequate	Appropriate: Visible, readable, Adequate: enough for distribution	
q8	Are there adequate number of forms and formats necessary for OPD-SAM?	1. No 2. Yes, not adequate/complete 3. Yes, adequate/complete	Home treatment card, Follow up card, Register book, W/H table (z-score),	
q9	Is there the flow chart of operational guideline visible in the wall?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: Visible, readable,	
q10	Are there adequate equipment for the center?	1. No 2. Yes, not adequate/complete* 3. Yes, adequate/complete	Baby scale, measuring board, Salter scale, MUAC tape	
q11	Are there enough supplies for management of severe malnutrition available in the health facility according monthly case load?	1. No 2. Yes, not adequate/complete* 3. Yes, adequate/complete	Plumpy nut	
q12	Are there enough pharmaceuticals available to treat severe malnutrition according monthly case load?	1. No2. Yes, not adequate/complete*3. Yes, adequate/complete	Antibiotics and other necessary drugs	
Process				

q13	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		
q14	Do all counselor have MoPH certificate	1. No 2. Yes, not adequate 3. Yes, adequate		
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?	1. No 2. Yes	27-30 oC	
q17	Are children weight and height measured and interpreted correctly?	1. No 2. Yes	According to z-score table	
q18	Are the staff able to wash their hands with soap and water?	1. No 2. Yes		
q19	Are mothers able to wash their hands with soap and water?	1. No 2. Yes		

Integrated Management of Acute Malnutrition Operational Guide

q20	Are children referred correctly to IPD-SAM or OPD-MAM?	1. No 2. Yes		
Output				
q21	Check the registers for:			
a	Average number of admission/ day during the last month:	_____		
b	Correct registration of clients according to the standard form	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: clear, filling all required fields	
c	Cure rate:	_____		
d	Defaulter rate	_____		
q22	Are children's filing system completed correctly?	1. No, 2. Yes		

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:



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

Monitoring Checklist for OPD-MAM/ OPD-AM-PLW			
General information			
Date of visit: Year () / Month () / Day () -- Implementer Partner: ()			
Supervisor/monitor: Name () Position () Organization ()			
Location: Province name and code () / District name and code ()			
Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other (), HF Code: _____ and HF name:			
SN	Questions	Answers (1=Yes, 0=No)	Remarks
	Input indicators		
q1	Are appropriate number of staff available for delivering OPD-MAM ?		
q2	Is qualified female staff available for measuring nutrition status of PLW?		
q3	Have the relevant staff received initial and refresher (every 3-6 months) training?		
q4	Is clear job description available for each OPD-MAM staff?		
q5	Is feeding centre register book filled properly and regularly ?		
q6	Are the information consistent in register book, monthly report, stock report, patient cards, etc?		
q7	Does the filing/record keeping system exist for OPD-MAM?		

q8	Are tables, charts/graphs put on the wall showing the key information (monthly admission, cure, default, death, coverage area map, etc)?		
q9	Is the map of program coverage area available?		
q10	Does OPD-MAM work-plan distribution plan/schedule exist and used?		
q11	Does the Nutrition guideline & SOP present and used by relevant staff?		
q12	Does the relevant staff regularly review OPD-MAM data/performance indicators and take action in weekly and monthly meeting?		
q13	Are the required equipment available for nutrition status assessment and food measurement?		
q14	Are measuring equipment accurate and checked daily?		
q15	Is there safe water available for staff, beneficiaries and caretakers?		
q16	Is soap and water available for hand washing?		
q17	Are OPD-MAM rooms and courtyard clean?		
q18	Are latrines clean and sufficient in number for demand?		
q19	Is sufficient space available for OPD-MAM service delivery?		
q20	Are shelves and floor free of food scraps/refuse?		
q21	Are equipment/ utensils washed and dried properly, and stored in clean, dry place?		
Process			
q22	Do MUAC measure correctly?		
q23	Do weight and height measure correctly?		

q24	Is anthropometric index calculated correctly and nutrition status correctly assessed?		
q25	Are admission and discharge criteria applied correctly?		
q26	Are the 5 steps for admission of MAM-CH and AM-PLW followed properly?		
q27	Are the MAM-CH and AM-PLW referred to required medical care (vaccination, deworming, ANC, PNC, etc)?		
q28	Is health and nutrition education provided regularly to PLW and child caregivers?		
q29	Is ration size meets MOPH protocol (nutrient quality and quantity)		
q30	Are food commodities stored in clean, controlled area?		
q31	Is the food stock managed properly (FIFO, LIFO, stock-cards, etc)?		
q32	Are the defaulted/absent cases regularly and timely followed-up?		
Output			
q33	Is released ration appropriate according to the ration size and consistent with number of beneficiaries?		
q34	Are community agree with objectives and design of OPD-MAM?		
Overall scores (%)		0%	
Gaps/Problems		Solutions/Recommendations	



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

Monitoring Checklist for IYCF activities in Health Facilities

Identification			
q1	Date: Year () / Month () / Day ()		
q2	Location: Province () / District ()		
q3	Health Facility Type: 1. PH, 2. DH, 3. CHC, 4. BHC, 5. SHC, 6. Other (), HF ID: _____		
SN	Questions	Answers	Remarks
Input indicators			
q4	Is there a trained IYCF counselor in the HF?	1. No 2. Yes (but not present) 3. Yes (present)	A trained IYCF counselor should have received one week training on IYCF counseling skills.
q5	Is there at least one copy accessible MoPH guidelines on IYCF in the clinic?		
a	Breastfeeding counseling guideline:	1. No 2. Yes	
b	Baby friendly Hospital initiative	1. No 2. Yes 3. Not required	
c	Complementary feeding	1. No 2. Yes	

q6	Are there posters on IYCF visible in the HF?	1. No 2. Yes but not appropriate 3. Yes, appropriate	Appropriate: Readable, clean and in a visible place for clients.
q7	Are there brochures on IYCF available in the health facility to be distributed to clients?	1. No 2. Yes but not enough for distribution 3. Yes, distributed	Take home brochures should be available and distributed to those who come for counseling
q8	Are there other IEC materials on IYCF available in the HF?	1. No 2. Yes but not used, 3. Yes, used	Other IYCF IEC materials include flipcharts, flipcards, models etc.
q9	Are there recording and reporting forms and formats available for IYCF counseling?	1. No 2. Yes but not complete 3. Yes, complete	Including register form, reporting form approved by MoPH
Process indicators			
q10	Are the health staff know the following key messages of IYCF?		Health staffs (Medical doctor, Nurse and midwife)
a	Early initiation	1. No, 2. Yes	Initiation of breastfeeding within first hour after birth.
b	Exclusive breastfeeding	1. No, 2. Yes	Exclusive breastfeeding for the first six months of life
c	Complementary feeding	1. No, 2. Yes	Introducing nutrients rich food at the age of six months
d	Code of breast milk substitutes	1. No, 2. Yes	No promotion and free distribution of breast milk substitutes
q11	Does the counselor provide Breast feeding counseling to pregnant and lactating mothers?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate counseling: includes proper listening to mothers, explaining clearly and helping/ showing some important methods
q12	Does the counselor provide appropriate counseling on complementary feeding?	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate counseling: indicating of proper timing, frequency and types of food e.g. semi solid or solid food

Integrated Management of Acute Malnutrition Operational Guide

Output indicators			
q13	Check the register of IYCF counseling for:		
a	Average number of counseling/ day during the last month:	_____	
b	Correct registration of clients according to the standard form	1. No, 2. Yes, but not appropriate 3. Yes appropriately	Appropriate: clear, filling all required fields
c	Is there referred-in women from the community for counseling?	1. No, 2. Yes	Referred by CHWs, support groups or Family action groups.
q14	Are women give birth in the HF start immediately breastfeeding?	1. No, 2. Yes within 6 hour 3. Yes, within 1 hour	

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:

FORM 21. QUARTERLY NUTRITION SUPPLY REQUEST FORM

!!!! Please go to a separate row for each province, each item and each partner

!!!!



Ministry of Health (MHS) (Ministry of Health) (MHS)

Quarterly Nutrition Supply Request Form



0

Province	Implementing Partner Name	Item name	Item description	Program	For IFA SAM (Select T1U or N)	Quarter	Request Date dd-mm-yy	Current balance from last release (nutrient for therapeutic, with for non-consumable item)	# children expected to be admitted in next quarter (Last quarter admission from Not distributed)	Needed quantity for next 3 months (in cartons and ONLY for therapeutic supply)	BUFFER stock (20% buffer stock)	Total quantity to be allocated (Needs + Buffer - Current balance)	Request quantity of Non-consumable item (highboard, scales, ...)	Comments
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0
0	0		0	0	0	0	1/0/00	0	0	0			0	0

CONSIGNEE REGISTRATION FORM

Organization Name:		
Complete Address:		
City:		
District:		
Province:		
Country:		
Full Name & Phone No. of Contact Person:		