



**Internship Report**  
**On**  
**Management of severe acute malnutrition in children age 6-59 months at Dhaka**  
**Sishu Hospital, (DSH).**

Submitted To  
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Date of Submission: 20/02/2022

## Letter of Transmittal

Date: 20-02-2022

Dr. Sheikh Mahatabuddin

Associated Professor

Department of Nutrition & Food Engineering

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Daffodil International University

Subject: Submission of internship report.

Dear Sir,

I would like to take this opportunity to thank you for the guidance and support you have to provide me during the course of this report. I am here submitting my internship report on "Management of severe acute malnutrition in children aged 6-59 months" at Dhaka Shishu Hospital. I have got opportunity to work in Dhaka Shishu Hospital in the department of Gastroenterology and hepatology unit for 30 days, under the supervision Sabrina Makbul, Senior nutritionist and Shanta Roy, dietician.

This internship gave me both academic and practical exposures. First of all, I learned about clinical nutritional assessment of SAM, facility-based management of children with severe acute malnutrition guidelines and counseling of children diet. Secondly, the internship gave me the opportunity to develop and enrich my theoretical knowledge I have acquired during the study period.

I am submitting this report for your kind consideration and also shall be highly obliged if you are kind enough to receive this report and provide your valuable judgment. Thank you again for your support and patience.

Yours Sincerely,

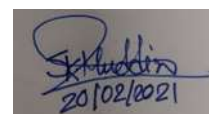


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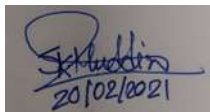
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### **CERTIFICATE OF APPROVAL**

On the behalf of the university, this is to certify that Sadia Arafin, bearing ID: 181-34-727, Program B.Sc. in Nutrition & Food Engineering is a regular student, department of Nutrition & food Engineering, Faculty of Allied health Sciences, Daffodil International University. She has successfully completed her internship program of One month in Dhaka Shishu Hospital (DSH), on SAM management of 6 month to 59-month children. Then she completed this report on 5 January, 2022, under my direction. We were aware that Sadia Arafin completed her internship report by observing our teacher. In addition, I ensure that her report is worthy of fulfilling the partial requirements of the NFE program.

.....

Ms. Fouzia Akter  
Assistant Professor & Head  
Department of Nutrition and Food Engineering  
Faculty of Allied Health Science  
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.....

Supervisor  
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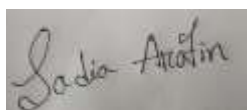
## **Acknowledgements**

All praises to the Almighty Allah, the most beneficent and most merciful. Without her blessings, none of this world has been possible.

First and for mostly it is my immense pleasure to express my heart full gratitude and deepest sense of indebtedness to my honorable teacher Prof. Dr. Sheikh Mahatabuddin Ph.D., Associated Professor of the Department of Nutrition and Food Engineering, who had given me the opportunity to attend the program. His affection, advice, co-operation, generous and scholastic guidance, constant surveillance and constructive criticism in completion of this dissertation. And the sincerest respect, gratitude and obliged for Sabrina Makbul (Senior nutritionist) & Shanta Roy (Dietitian), Dhaka Sishu Hospital (DSH). This internship may help me to build a bright future & carrier.

My feelings during this internship program were great and I enjoyed it very much. This could only be possible for generous contribution of all nutrition section staffs. My achievement during this program will definitely help me in my professional field. Thanks to all employee of Dhaka Sishu Hospital (DSH) for their friendly co-operation and helping during my training period.

I am thankful to all my teachers of Department of Nutrition and Food Engineering, Daffodil International University for their help encouragement during the study.



Sadia Arafin

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## Table of Contents

Chapter No.	Name	Page No.
1.	Introduction	1
1.1	The establishment of the Dhaka Shishu Hospital (DSH)	1
1.2	Vision and Mission	2
2.	Context of the Internship	
2.1.	About Internship Program	3
2.2.	Origen of the Report	3
2.3.	Objective of the Internship Program	4
3.	General Functions Activities	5
3.1.	Function	5
3.2.	Check-up & Round	5
3.3.	Communication with superiors	6
3.4.	Patient Care & Management Vital Nutritional Principle	6
3.5.	Vital nutritional Principle	7
4	Fundamental of SAM	8
4.1	About the Fundamentals	8
4.2	SMA in Bangladesh	8
4.3	Management of SMA: Combining facility based and community-based care	9
4.4	Acute malnutrition and classification	10
4.5	Management Plan of SAM	11
4.6	There are lot advantages of combined facility based and community -based approach	12
5.	Assessment and Criteria of SAM	13
5.1.	Assessment of severe acute malnutrition and admission criteria	13
5.2.	For Inpatients or outpatients, there are certain admission requirements	14
6	Principles and Steps of SAM Management	15
6.1	General principles of management	15
6.2	These Ten Steps are accomplished in Two Phases	16
6.3	Time-frame for the management of a child with severe acute malnutrition	17

7	Treatment of Associated Conditions	18
7.1	Vitamin A deficiency	19
7.2	Dermatosis signs	20
7.3	Helminthiasis	21
7.4	Tuberculosis	22
8	Case Fatality	23
8.1	Failure to respond to treatment	24
8.2	Low weight gain during the rehabilitation phase	24
9	Discharge	25
9.1	Discharge Before Complete recovery	25
10	Emergency Treatment of shock and very severe anaemia	26
11	Standards	27
11.1	WHO 2006 child growth standards	28
11.2	Electrolyte-mineral solution	28
11.3	Recipes for starter (F-75) and catch- up (F-100) formulas	28
11.4	F-75 recipes if cereal flour and/or cooking facilities are unavailable and F-100 recipes	29
11.5	F-75 feed volumes for children with Severe Oedema	30
11.6	Range of volumes for free feeding with F-100	31
11.7	Monitoring Record	32
12	Basic about MAM	33
12.1	Community Based management of acute malnutrition (CMAM)	34
12.2	Community Outreach Activities	35
12.3	Identification and referral of children with acute malnutrition and acutely malnourished PLW at community outpatient site	36
13	Discussion and Conclusion	40
14	Reference	42

## **1.1 The establishment of the Dhaka Shishu Hospital (DSH)**

The Dhaka Shishu (Children) Hospital is Bangladesh's largest children's hospital. With 640 beds, it is a government-supported tertiary level public hospital for children. Dhaka Shishu (Children) hospital, the country's first children's hospital, was founded just months after Bangladesh was liberated in March 1972. It began its services at a private house in Dhanmondi, Dhaka, with 50 indoor beds, with the aid of a few voluntary groups and the Government of Bangladesh. At the same time, the hospital's outpatient department (OPD) resumed operations in a tent in Sukrabad, Dhaka. Initially, the "Save the Children Fund, UK" and later, "World Vision, Bangladesh" provided consistent financial support.

The National Economic Council (NEC) of Bangladesh, chaired by Bangabandhu Sheikh Mujibur Rahman, the then Prime Minister of the People's Republic of Bangladesh, authorized a plan to build a 250-bed children's hospital that could be expanded to 650 beds in December 1974. After receiving approval from Bangladesh's Ministry of Health and Family Welfare, the project was relocated to its current location in Sher-e-Bangla Nagar, Shyamoli, Dhaka, in March 1975.

The Dhaka Shishu Hospital first opened its doors in June 1977. The government paid for the building grants and the DSH trust fund, which were funded by contributions, two public lotteries, and concerts. Bangladesh's Ministry of Health and Family Welfare established a committee to oversee the construction project. A member of the construction committee was late Prof. Tofayel Ahmed, the Founder Member Secretary of the Management Board of Dhaka Shishu Hospital.

Honorable Prime Minister Sheikh Hasina lay the foundation stone for a new 9-story hospital facility on January 17, 2012. At the same time, she opened the Pediatric Cardiac Center, which includes Cardiac Surgery, a Cath Lab, and a Cardiac ICU, making it the first of its type in the country.

## **1.2 Vision and Mission:**

Honorable Prime Minister Sheikh Hasina lay the foundation stone for a new 9-story hospital facility on January 17, 2012. At the same time, she opened the Pediatric Cardiac Center, which includes Cardiac Surgery, a Cath Lab, and a Cardiac ICU, making it the first of its type in the country. Therefore, the plan is as follows.

- Expansion of hospital beds
- Development of Interventional Cardiology, Cardiothoracic Surgery o  
Construction of separate BICH block
- Extension of accommodation for full-time residential staff
- Bone marrow transplantation/ DNA analysis
- Staff transport



### **2.1 About Internship Program:**

Malnutrition is caused by a significant imbalance between nutritional intake and individual requirements in severe acute malnutrition. Deficiencies in quantitative and qualitative components (vitamins and minerals, for example) are the most common causes. Malnutrition affects more than half of the population. 450,000 children suffer from severe acute malnutrition, while over 2 million suffer from mild acute malnutrition. Children under the age of five are affected by anemia in 52 percent of cases. Stunted children account for 41% of children under the age of five. 16 percent of children under the age of five are overweight. Underweight children under the age of five account for 36% of all children under the age of five. A quarter of women are underweight, and 15% are short in stature, increasing the risk of difficult deliveries and low-birth-weight infants. Anemia affects half of all women, with the cause being primarily dietary. Malnutrition is predicted to cost Bangladesh over \$1 billion in lost productivity each year. The mission of Dhaka Shishu Hospital is to reduce the prevalence of severe acute malnutrition.

### **2.2 Origen of the Report:**

A student's academic career concludes with an internship. This internship program is the culmination of our studies and our successful careers. As a nutrition and food engineering student, hospital or industry-based training is critical for grasping a concept gained in formal education. We need to intern hospital duties, which are included in training and essential for planning information obtained via legal education. This is essentially a learning opportunity for me. There is still a significant divide between academic knowledge and the actual reality of contemporary health and nutrition. This report is based on a requirement for the B.Sc. in Nutrition & Food Engineering program's curriculum. "Knowledge of severe acute malnutrition in children aged six months to five years" Pediatric gastroenterology hepatology and nutrition at Dhaka Shishu Hospital (DSH), for which I studied their guidelines, the patient is treated, operational activities, and almost capable performance.

Following consultation with Dr. Sheikh Mahatabuddin, Associated Professor Department of Nutrition and Food Engineering, my renowned university supervisor, I completed my internship program as a regular student. My research and analysis will be focused on the problem of "severe acute malnutrition" in children aged 6-59 months.

### **2.3 Objective of the Internship Program:**

My major goal is to put together this report to meet the requirements of the B.Sc. in Nutrition & Food Engineering program. There are three credits available for the internship program, and it is up to you to determine the relationship between truth and a beneficial notion for knowledge and experience. It is only via practical actualization of planned thinking, which we study and learn from our academic performances, that we may acquire a brief lesson of knowledge to the immediate health stroll concerning the purpose of my internship program, which is the growth of children's health in the case of severe acute malnutrition. Some parents are baffled as to why their children are afflicted by SAM, while others are aware of the cause. Some of the people do not practice proper hygiene, drink unsafe water, have poor sanitation, do not adequately hand wash, do not have nutritious food, do not have nutritional knowledge, do not practice exclusive breastfeeding, do not know about vaccination, do not exclusive breastfeeding, do not know the environment, do not have knowledge about the family's lifestyle, and do not have knowledge about the environment.

### **3.1 Functions:**

This chapter is a description of my workflow. I was assigned to work in the Pediatrics Department, a branch of the DSH gastrointestinal and herpetology department. This department is also referred to as the Nutritional department in certain circles. The majority of the work in this section is devoted to malnutrition. Malnutrition is the leading cause of mortality in children ranging from less than six months to five years. Malnutrition is a leading cause of death and morbidity in impoverished nations such as Bangladesh, and it is preventable. This section is responsible for providing medicine, teaching, student training, and research. To be on time, we must precisely get to the location at eight o'clock, and we must begin working at eight-thirty. Our workday starts at 8.30 a.m. and concludes at 2 a.m., Saturday through Thursday.

### **3.2 Check-Up & Round:**

During the follow-up session, we get to work on our projects. After the catch-up session, the instructional day starts at 9:00 a.m. The DSH nurses collect some basic information about the children's weight, height, and health status. Following that, patients are subjected to dietary monitoring. The youngsters are checked on every morning, and their nutrition programs are altered accordingly to ensure that their nutritional targets are attained. During the follow-up appointment, the nutritionist and dietician monitor the children's progress in their recovery. Once a patient has been admitted to a treatment facility, the staff will provide clinical care, dietary management, counselling, and daily and long-term follow-up. In the case of new patients, the caregiver or mother provided the nutritionists at DSH with the same information about the children, including their age, birth date, weight, length, and health status, as she did for existing patients. The nutritionist then decided on what to do with those youngsters. After going through all of this, we are given a briefing by the DSH nutritionist. The dietician taught a new lesson in facility-based management that was introduced to us by the dietician daily. Approximately an hour was spent on this discussion. Following that, the round began at 11 a.m., during which we learnt how to check on the children's health and

what therapy or food should be provided to them based on their needs. In addition, the sessions we took previously all showed that we were functioning correctly in that round. The following are some photos from the follow-up and round session.

### **3.3 Communication with Superiors:**

I work in a hospital under the supervision of one efficient nutritionist, senior nutritionist Sabrina Makbul, dietician Shanta Roy, and one feeding nurse all of them are very knowledgeable about nutrition. Our job in the follow-up division begins with the fact that around 10-20 patients come into our department for nutritional monitoring on any given day. In this part, a new food plan for the day is provided, and the progress of the youngsters is monitored. Medication, instruction, student training, and research are some of the services provided by my supervisor.

### **3.4 Patient Care and Management:**

The majority of the children we see suffering from SAM (Severe Acute Malnutrition) and MAM (Malnutrition) are suffering from pneumonia, diarrhea, dysentery, vitamin deficiencies, Dermatitis, renal patients, other infections, certain neurological and cardiac illnesses, and so on.

The dietician and nutritionist provide the patient with guidance on the nutritional plan for children and nutritional education and advice on healthy eating habits. Our trainers provide us with a great deal of knowledge regarding dietary management, including how to prepare and deliver F-75 and F-100 meals, among other things. In addition to these options, there is chicken soup, rice, ORS, ReSoMal, and the elemental diet to consider. A specific feed was developed to aid in the recovery of the children from their severe illness while preserving their nutritional condition, which is crucial throughout the curative and healing phases of the children's treatment. The food is taken care of by the dietitians. If the sick is finished, the children will follow. Foods provided by the ward's administration to its patients. Some of the outpatients may come in for dietary advice for the youngsters on occasion. The period for nutritional counselling begins after 12 a.m. We gathered our data information from the various terms that were used. Then we go to other wards, such as (1), (2), (4), (5), (6), (7), and so on (8).



During round session, Patient care & management.

### **3.5 Vital nutritional principle:**

DSH educates us about the many kinds of nutrition, the prerequisites for assessing nutrition, and the definitions of malnutrition, all of which are listed here.

#### **3.5.1 Common nutrition types, measurements, and cutoffs:**

Height, weight, MUAC, and head circumference are standard anthropometric parameters for children. Bilateral pitting edema is often examined with anthropometry as a clinical indication. Certain measures, such as length/height-for-age (HFA), weight-for-length/height (WFH), weight-for-age (WFA), body mass index-for-age (BMI-for-age), and head circumference-for-age, are provided as indices. Each indicator is represented by a z-score, This indicates how far and in which direction an individual's measurement deviates from the World Health Organization's Child Growth Standards median. A z-score that is more than or equal to the "normal" range suggests a nutritional problem. MUAC and low birth weight measures are compared to age-appropriate cutoffs.

Table 1: Nutrition Types

CONDITION	DESCRIPTION	MEASURE or INDEX	MODERATE	SEVERE
Stunting is a sign of chronic malnutrition and raises the risk of mortality.	Low length/height relative to age	Height for age	<-2 to ≥ -3 zscore	< -3 zscore
Acute malnutrition causes fast weight loss, insufficient weight growth, or bilateral pitting edema (fluid buildup in both feet).	Low weight relative to length/ height	WFH* or BMI for-age	<-2 to ≥ -3 zscore	< -3 zscore
		MUAC (6–59) months		
		Or edema		
Underweight can indicate stunting, acute malnutrition, or both	Low weight relative to age	Weight for age	<-2 to ≥ -3 zscore	< -3 zscore
Obesity is defined as having too much fat in the body.	High weight relative to length or height	Weight for height or BMI for-age	> +2 to ≤ +3 zscore (overweight)	> +3 zscore (obese)
Low birth weight increases the risk of infant death, stunting, reduced brain development	Low weight measured within 24 hours of birth	Weight	< 2,500 g to ≥ 1,500 g (low)	< 1,500 g (Very low)

## **4.1 About the Fundamentals**

On the first day, we learnt about the fundamentals of severe acute malnutrition and how to recognize it. And, in Bangladesh, what are the factors that contribute to the plight of children? The definition of severe acute malnutrition and how to prepare for the facility- and community-based care are discussed. In collaboration with all of Bangladesh's health authorities, the Nationwide Nutrition Service has developed a national guideline for facility based and community-based care of malnutrition in children in Bangladesh. All of the issues listed below are explored in detail in this study.

## **4.2 Severe Acute Malnutrition in Bangladesh:**

Severe acute malnutrition is one of the biggest reasons for death in children. Nearly 20million pre-school children are affected by SAM, mainly from Africa and the southeast region. Malnutrition causes 8 million deaths in children under 5 years of age worldwide. The risk of death among children is nine times higher than in well-nourished children.

The percentage of Bangladeshi children aged 5 years who are hindered has decreased from 51% in 2004 to 36% in 2007, while the percentage of children who are underweight has decreased from 41% in 2007 to 33% in 2008. (BDHS 2014). The lowering waste rate, though, isn't true to pattern, falling from 17 percent to 14.3 percent over a decade. Approximately 3.1 percent (BDHS 2014) of under-5 children are diagnosed with SAM only based on their weight-for-length or stature z-score (WHZ)-3, resulting in a total of 450,000 cases. Because there is no published data on the prevalence of SAM using the mid-upper arm periphery (MUAC) and the existence of bipedal oedema in less than 5 children, the true number of children with SAM could be much greater than the current estimate.

Children with SAM can be effectively treated using WHO guidelines that have been shown to be reasonable and feasible, even in small town medical facilities with limited resources. The WHO guidelines were followed to the letter, with considerable reductions

in the event that casualty rates were met. The WHO regulations are organized to deal with the mind, and they contain ten stages divided into two stages, as well as substantial physiological changes in severe hunger.

#### **4.3 Management of severe acute malnutrition: combining facility-based and community-based care:**

SAM in kids has traditionally been overseen at the facility level through inpatient helpful consideration in Bangladesh. A small extent of cases gets this treatment since active case finding locally is uncommon or missing, numerous families can't bear the financial and opportunity costs related to facility-based inpatient care, and wellbeing offices can't sensibly deal with a high caseload.

Inside-based inpatient care is fundamental when SAM has advanced to a phase where children have unexpected medical problems such are life-threatening. Stages when complications are missing, the technical aspects of treatment are basic. There is general agreement that severe acute malnutrition without difficulties doesn't need inpatient treatment and can be viably overseen at the community level. Subsequently, to augment coverage and access to therapeutic care for kids with severe acute malnutrition, an approach that joins the accompanying parts is generally appropriate:

#### **4.4 Acute malnutrition and classification:**

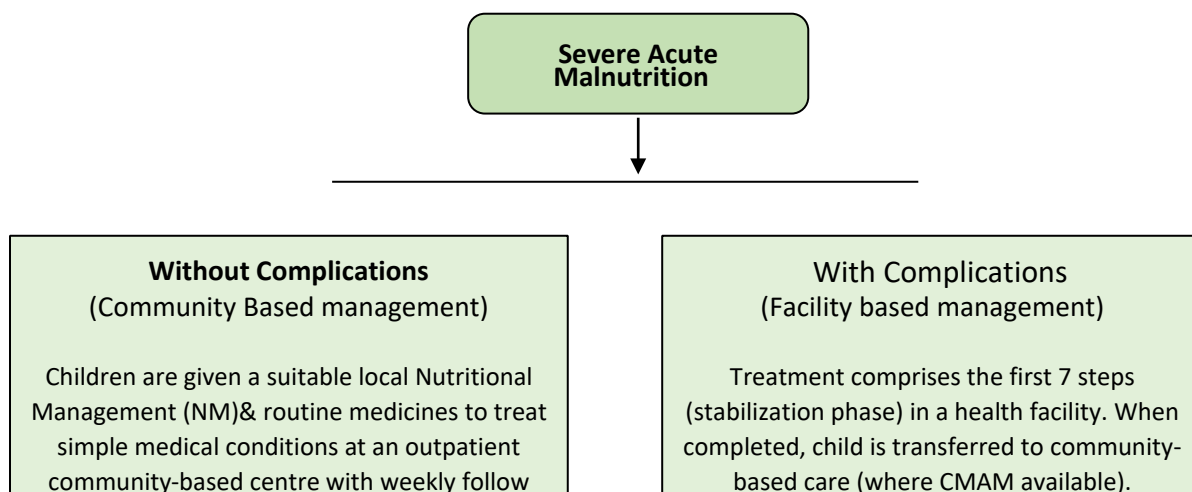
Acute malnutrition can be classified in this way:

- MUAC<125mm and/ bipedal oedema
- SAM: MUAC<115mm / bipedal oedema
- MAM: MUAC115mm-<125mm

#### **4.5 Management Plan of SAM:**

SAM management can be divided into two categories. Depending on whether SAM affects the child with difficulty or without complications, two separate steps must be taken. A flowchart depicting these procedures is shown below.





#### **4.6 There are a lot of advantages of combined facility-based and community-based approach:**

Active case seeking for severe acute malnutrition in the community using fast screening measures such as the mid-upper arm circumference (MUAC). Children with severe acute malnutrition are identified early in the disease's course, before medical issues arise, thanks to active case-finding in the community. Only 10-15 of the SAM children you watch after would require facility-based inpatient treatment if cases are commonly diagnosed early.

The rational utilization of facility-based inpatient treatment lets health facilities to concentrate resources on specialized care for children with SAM problems.

Access to uncomplicated community-based child care improves children by limiting their exposure to hospital-acquired infections, and it benefits families by reducing the amount of time caregivers spend away from home and other siblings, as well as lowering opportunity costs.

## 5.1 Assessment of SAM and admission criteria:

During the second day, we learned how to diagnose severe acute malnutrition and determine the admission criteria. The diagnosis of severe acute malnutrition and the admission criteria are determined.

### 5.1.1: Assessment of SMA:

These are the results of the evaluations of SAM. We may categorize youngsters as being in distress. When a kid has one or more of the following conditions, they will suffer from SAM:

1. If mid-upper arm circumference  $<11.5$  cm
2. If Weight for length z score  $<-3$ sd or weight for height z-score  $<-3$ sd
3. Bipedal oedema.

There are also some uncertainties based on these classifications of children aged  $<6$  months as SAM. A child aged  $<6$  months should be classified as SAM if the child has one or more of the following:

1. Weight for length z-score  $<-3$
2. Bipedal oedema
3. Visible wasting

### 5.1.2 Oedema in all children is classified according to the classification system outlined below:

Table 2: Grade of Oedema

Grades of oedema	Definition
Grade+	Mild: Ankles or both feet
Grade++	Moderate: Both feet, lower legs, hands or lower arms
Grade+++	Severe: severe oedema including feet, legs, hands, arms and face

## 5.2 For Inpatients or outpatients, there are certain admission requirements:

Symptoms of the following diseases will result in a child being hospitalized for inpatient or outpatient treatment:

Table 3: Admission Criteria

Sign	Criteria for inpatient treatment
Oedema	*Grade++ and grade +++
Oedema with wasting	Any grade of Oedema with Muac<115mm or WLZ or WHZ<-3)
Appetite/ anorexia	Poor appetite or unable to eat
Vomiting	Persistent vomiting (>3 per hour)
Temperature	Fever (>39°C or 102.2°F axillary) or hypothermia (<35°C or 95°F axillary)
Respiratory rate	Rapid breathing according to IMCI guidelines for age ≥60/min for children <2 months ≥50/ min for children 2-12 months ≥40/ min for children 15-59 months
Anaemia	Severely pale (severe palmer pallor) with or without difficulty breathing
Infection	Extensive infection requiring parenteral treatment
Alertness	Very weak, apathetic, unconscious, fitting/convulsions
Hydration status and dehydrating diarrhea	Dehydration is diagnosed by the caregiver based on a history of diarrhea, vomiting, fever, sweating, and not passing urine in the previous 12 hours, as well as the recent appearance of clinical indications of dehydration.
Other criteria	Infant <6 months with SAM
	Caregiver requests inpatient care

### **6.1 General principles of management**

Despite meeting all of the prerequisites, a child with SAM requests admittance. We need to give extra care for the child because he or she is severely malnourished. Ten procedures are referred to as "SAM management" in the national recommendations. These practices are carefully monitored and kept up to date. The dietitian and the doctor collaborated to keep the children's levels of hypoglycemia, hypothermia, and dehydration stable for the first two days. In the following sections, each remaining step and its associated time range are described and briefly discussed.

Step 1: firstly, treatment or prevent hypoglycemia

Step 2: then treat or prevent hypothermia

Step 3: thirdly treat or prevent dehydration

Step 4: Correction of electrolyte imbalance

Step 5: Treatment or prevention of infection

Step 6: Correction of micronutrient deficiencies

Step 7: Starting feeding cautiously, including breastfeeding

Step 8: Achieving catch up growth

Step 9: Providing sensory stimulation and emotional support

Step 10: Preparing for discharge and follow up after recovery.

A Facility-based inpatient care for children with severe acute malnutrition with complications only encompasses the first seven phases in territories where community-based care has been established. These procedures should take four to seven days to complete, after which the child is discharged to community-based care to continue SAM management.

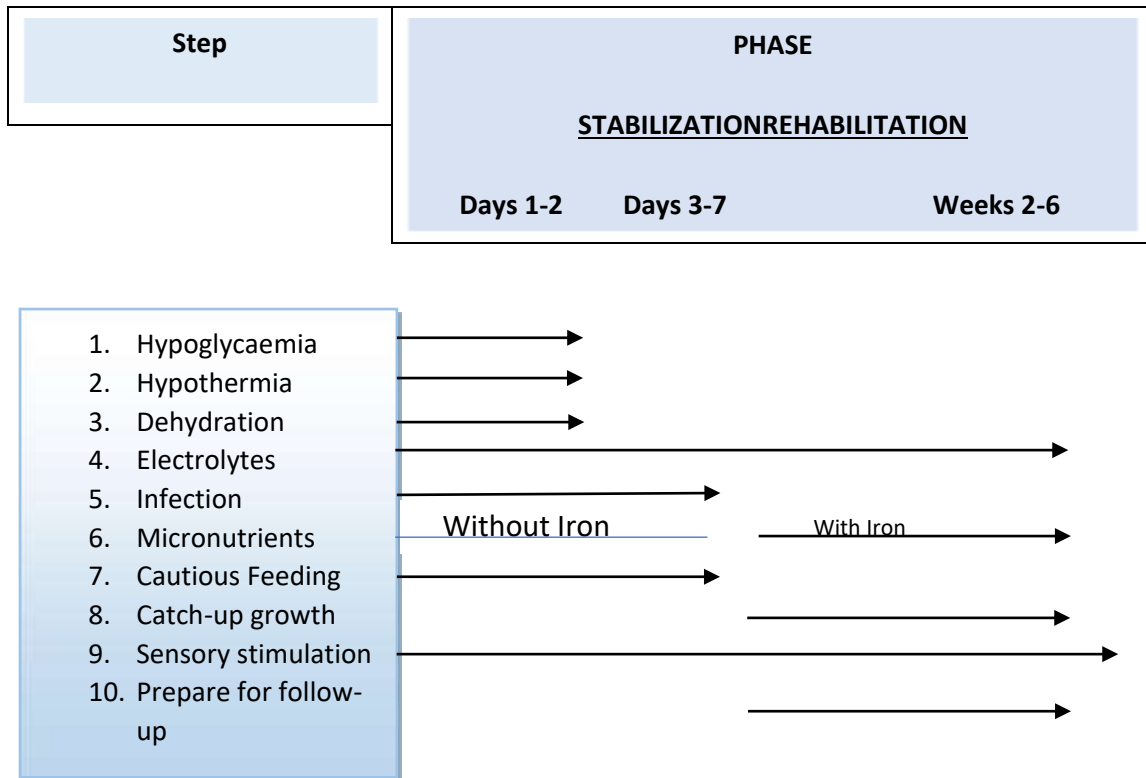
### **6.2 These Ten Steps are accomplished in Two Phases:**

1. Stabilization: Once life-threatening complications have been discovered and treated, particular deficiencies have been rectified, metabolic abnormalities have been reversed, and feeding has begun.

**Rehabilitation:** When the intensive phase begins, the weight loss is accompanied by an increase in emotional and physical stimulation. Breastfeeding is restarted or encouraged during this stage.

## Time-frame for the management of a child with severe acute malnutrition:

The time-frame care of a kid suffering from severe acute malnutrition is depicted in the accompanying diagram.



There is an intervening transitional phase of treatment for 2-3 days dietary treatment changes from low calorie-low protein (f-75) to high calorie-high protein diet (F-100).

### Treatment or prevention of hypoglycemia:

#### Diagnosis:

Hypoglycemia and hypothermia are most often associated with infection and occur simultaneously due to the illness. A malnourished child who has not been fed for 4-6 hours may also develop hypoglycemia. Consider hypoglycemia if hypothermia is detected (axillary temperatures below 35 degrees Celsius or 95 degrees Fahrenheit) or whenever there is sleepiness, flabbiness, limpness, or loss of consciousness. It is necessary to draw blood and test the glucose level to calculate blood glucose quickly and accurately (for example, using dextrostix). Otherwise, we must draw blood and test the glucose level. When the glucose level is 3 mmol/L or 54 mg/dL, hypoglycemia is considered to have occurred.

**Treatment:**

If the youngster is awake, we must treat him or her as follows:

- Orally or through nasogastric (NG) tube, a 50 ml bolus of 10% glucose or sucrose solution (5 g or 1 adjusted teaspoon sugar in 50 ml or 3.5 tablespoons water).
- Then we must feed starting diet F-75 for two hours on the dot (providing one-fourth of the recommended two-hour feed volume).
- We need to keep the kids warm.
- Then there are antibiotics.
- Day and night, there are two-hourly feeds.

**If the child is unconscious or convulsing, we have to give:**

- 50 ml of 10% glucose or sucrose via NG tube after 10 percent glucose (5 ml/kg) IV. Give F-75 as a starter at that moment.
- If convulsions persist after IV glucose, give per rectal diazepam (0.5 mg/kg body weight)
- Keep the youngsters warm
- Antibiotics

**Following such measures, we must keep an eye on the child on a continual basis:**

\*Blood glucose: repeat dextrostix after two hours. When treated, most children balance within 30 min. If blood glucose tumbles to <3 mmol/L give a further 50 ml bolus of 10% glucose or sucrose solution, and keep feeding each 30 minutes for two hours (giving one fourth volume of the complete suggested two hours' feed)

\* Axillary temperature: if this tumbles to <36.0 °C or 96.8°F, rehash dextrostix

\*If the level of consciousness stays static; the treatment of hypoglycemia ought to be repeated

\*If the condition doesn't improve, think about different causes as well as allude to a higher facility if conceivable.

**Step 2: Treatment and prevention of hypothermia:**

When it comes to preventing hypothermia in children, the methods outlined below should be followed extremely carefully.

**Diagnosis:**

When the axillary temperature is <35°C or 95°F treatment, monitoring and prevention steps will be following steps:

**Treatment:**

Re-warm the kid: either dress the kid (counting head), cover with a warmed cover and increment the surrounding temperature with accessible however safe warmth source(s), or put the kid on the mother's bare chest (skin to skin/Kangaroo Mother Care (KMC)) and cover them.

**Monitor:**

- Ensure that the kid is roofed at all times, especially at night
- Pity warmth
- Temperature: during re-warming, take axillary temperature two-hourly until it (rises to >37.0 °C or 98.6 °F)
- Blood sugar level: check for hypoglycemia whenever hypothermia is found

**Prevention:**

- Keep kid covered and distant from cold air.
- Avoid customary washing, keep kid dry, change wet nappies, garments and bedding
- Avoid openness (for example, washing, drawn-out clinical assessments). let kid move in the feed mother/parental figure in obscurity for warmth. Feed two-hourly, start immediately.
- Always take care of for the duration of the day and late evening during the adjustment stage, particularly for the essential 24-48 hours.

**Step 3: Treatment and Prevention Dehydration:**

**Diagnosis:**

It is difficult to assess dehydration status in a child with SAM based on clinical signs alone due to the fact that clinical signs of parchedness can manifest in children who are experiencing extreme intense hunger (for example, moderate skin squeeze, depressed eyes, and dry mouth), or they can be signs of septic shock (for example cold hands and feet and lessened pee stream). Lack of hydration may be overstated in a marasmic/squandered child, and it may be underestimated in a

kwashiorkor/oedematous child, depending on the circumstances. Accept that children have watery looseness of the bowels in this manner.

### **Treatment:**

Both the normal oral rehydration salts (ORS) solution (90 mmol sodium/L) and the newly revised WHO-ORS solution (75 mmol sodium/L) have high sodium concentrations but low potassium concentrations, making them ineffective for children suffering from severe acute malnutrition. Instead, use a specialized rehydration solution for malnutrition patients.

Table 4: Rehydration Solution for Malnutrition (Resomal)

The newly modified WHO-ORS (75 mmol sodium/L contains ↑sodium & ↓potassium for SAM children.	
Preferably give special Rehydration Solution for Malnutrition (ReSoMal)	
Ingredient	Amount
Water (boiled & cooled)	850 ml
WHO-ORS (new formulation)	One 500 ml-packet
Sugar	20 g
Electrolyte/mineral mix solution	16.5 ml (if available)

### **Monitor:**

Half-hourly observations for the first 2 hours, then hourly observations for the following 4-10 hours.

- The pace at which the heartbeats
- Rate of respiration
- The frequency with which urine is excreted
- Frequency of stools or vomit

In the course of therapy, the child's rapid breathing and heart rate should slow, and he or she should begin to pass urine. The return of tears, a moist mouth, eyes, fontanelle that seem less depressed, enhanced skin turgor, and urine production are all signals that rehydration is progressing well. Whatever the case may be,

Many children suffering from severe acute malnutrition will not display these signs or symptoms even after being adequately rehydrated. Continuing with rapid respiration and



heartbeat during rehydration may indicate the presence of an illness such as overhydration that is already present.

**Prevention:**

The condition in which a youngster has persistent watery diarrhoea that causes severe dehydration with the purpose of reducing dehydration we need to follow:

- Feeding with starter F-75 should be continued.
- Supplant Calculate the approximate volume of stool losses with ReSoMal (give 510ml/kg after each water stool). Important: malnourished children often pass several little unformed stools; they should not be confused with profuse watery stools and do not need the administration of more fluids.
- If the child is breastfeeding, encourage him or her to continue nursing with increased repetition.

**Correct Electrolyte Imbalance:** These are the processes that need to be followed in the event of an electrolyte imbalance:

- Extra potassium 4mmol/kg/d for 1 week
- Extra 50% magnesium Sulphate 0.1ml/kg/day for 1 week
- When rehydrating, give low sodium rehydration fluid (e.g., ReSoMal)
- Prepare food without salt
- Do NOT treat oedema with a diuretic

#### **Step 4: Treatment and prevention of infection:**

##### **Diagnosis:**

Symptoms of sickness, such as fever, are usually absent in cases of severe acute malnutrition, and contaminations are commonly hushed up to conceal the presence of disease. So that all children with SAM are treated with broad-spectrum anti-microbials regularly every time they are admitted.

##### **Treatment:**

- Bacterial infections are the most prevalent kind of infection.
- In many cases, there are no signs or symptoms of infection.
  - provide broad range antibiotics regularly
  - If the children are older than 6 months and haven't been inoculated against measles, the vaccination should be provided.

#### **Step 5: Correct Micronutrient Deficiencies:**

All children with SAM are malnourished and deficient in minerals and vitamins. In light of the fact that supplying iron during an acute stage may worsen infections, despite the fact that frailty is normal, don't provide iron at first, but rather wait until the infection is cured, the child has a reasonable appetite, and the child begins to gain weight (as a rule constantly week)

##### **Treatment:**

Vitamin A should be consumed orally on day 1 unless there is proof that a dosage has previously been administered during the previous month (for children over 12 months, give 200000IU, for children 6-12 months, give 100000IU, and for children 0-5 months, give 50000IU).

For at least 2 weeks, we have to give the following daily:

1. A multivitamin supplement should be provided.
2. Folic acid (one milligram each day)
3. Copper 0.3 mg/kg (0.3 milligrams per kilogram).
4. 2 milligrams of zinc per kilogram

Table 5: Micro-nutrients can be given as below:

Vitamins and Minerals	Combined electrolyte/mineral solution available	If combined electrolyte – mineral solution nor CMV is available
Vitamin A on day 1	√	√
Daily for at least 2 weeks		
Multivitamin	–	√
Folic acid 1 mg/d (Give 5mg on day 1)	√	√
Zinc 2mg/kg/d	–	√
Copper 0.3 mg/kg/d	–	√
Elemental iron 3mg/kg/d when gaining weight (for about three months)	√	√
Potassium* 4mmol/kg/d	–	√
50% Magnesium Sulphate* 0.1ml/kg/d IM for 7 days	–	√

### Start Feeding Cautiously:

Because of the child's frail physiological condition and diminished capacity to cope with large feeding at this time, a careful approach is essential. Feeding should begin as soon as feasible after admission. It should be intended to deliver a sufficient quantity of energy and protein to allow the patient to maintain his or her regular physiological processes. The restrictions in this section apply to children between the ages of 6 and 59 months. For babies less than 6 months of age.

The important feature of the feeding during the stabilization phase are:

- Small, regular meals with low osmolarity and low lactose should be given to the animals.
- The use of oral or nasogastric (NG) feeding (and never parenteral formulations) is strongly recommended.
- One should consume 100 kcal/kg/day of energy.
- The percentage of protein consumed per kilogram of body weight each day should be 1-1.5 g protein/kg/d.

- The total fluid intake via meals should not exceed 130 mL/kg/day (100 mL/kg/day if the child has severe (+++) oedema, which implies edema of the legs, hands, and face).

The beginning formula and feeding regimens (described further below) are intended to achieve these goals in the shortest amount of time. Many youngsters benefit from milk-based formulas (see Annex 4 for recipes), such as starting formula F-75, which has 75 kilocalories per 100 mL of milk and 0.93 g protein per 100 milliliters of milk provided with a cup really weak children might also be fed using a spoon, dropper, or syringe if they were very weak. Listed below is a suggested feeding plan, during which the volume is progressively raised while the frequency of feedings is gradually lowered.

Table 6: The recommended strategy involves progressively increasing volume and decreasing feeding frequency.

Days	Frequency	Vol/kg/feed	Vol/kg/d
1-2	2-hourly	11 ml	130 ml
3-5	3-hourly	16 ml	130 ml
6+	4-hourly	22 ml	130 ml

#### **The criteria for increasing volume and decreasing frequency of F-75 feeds:**

- If there is vomiting and frequent loose stool (more than 5 per day), or if the child has a weak appetite, continue feedings every 2 hours.
- When there is little or no vomiting, less frequent loose stool (less than 5 per day), and the child completes most meals, the feeding schedule is changed to three hourly.
- Change to 4-hourly feeds after a day on 3-hourly feeds if there is no vomiting, less diarrhea, and the child is completing most of the meals.

#### **Step 6: Achieve catch up growth:**

An enthusiastic approach to feeding is required to achieve high intakes and rapid weight gain of >10 g/kg/d during the restoration period. The recovery of appetite, which typically occurs one week following admission, and a deficit in general/the totality of the oedema are indicators that the patient is ready to go onto the restoration stage. A continual modification is recommended to avoid the risk of cardiovascular failure if children ingest large quantities of sugar in a short period. The restrictions in this section

apply to children between the ages of 6 and 59 months. For babies less than 6 months of age.

The recommended milk-based F-100 provides 100 kcal and 2.9 g protein per 100 mL and is suitable for people with diabetes. During the final stages of the healing process, khichuri, halwa, or other acceptable family foods may be served. It is necessary to replace F-100 consistently with khichuri/halwa with the same number of calories. The role of parental figures as sources of inspiration is critical to the advancement of society. It is essential to spend sufficient time with the child to finish each feeding. Ideally, youngsters should be encouraged to feed efficiently while sitting comfortably on their mother's or caregiver's lap. If we want to switch from starter to catch-up formula, do the following: every 4 hours for 48 hours (transitional phase), replace starter formula F-75 with the same amount of catch-up formula F-100 every 4 hours for 48 hours (conversion phase), then increase each progressive feed by 10 ml until some feed remains uneaten. When intake reaches around 30 ml/kg/feed (200 ml/kg/d), certain pieces will likely remain unconsumed after the majority of the meal has been finished.

**The formula for calculating weight gain:**

$$\text{Weight gain in kg/kg/day} = \frac{(W2 - W1) \times 1000}{(W1 \times \text{number of days } W1 \text{ to } W2)}$$

Where: W1 = initial or lowest weight in kg

W2 = weight in kg on the day of calculation

Or, if weight gain is calculated daily, then the average of the daily weight gain (g/kg/day) can be used

**Step 7: Providing Sensory Stimulation and Emotional Support:**

Children's mental and behavioral development is negatively affected by severe malnutrition, but this may be reversed with adequate therapy, including sensory stimulation and emotional support.

**We need to provide:**

- Gentle, kind treatment (smiling, laughing, patting, touching, etc.) ○ It is necessary to create a joyful and exciting atmosphere.
- Should give 15-30 minutes of organized play therapy every day. The play sessions should use toys created from low-cost materials that are readily accessible in the community.

- Physical exercise as soon as the youngster can tolerate it after being sick.

### **Step8: Preparing for discharge and follow up after recovery**

A child who has achieved WLZ or WHZ > - 2 may be deemed to have recovered enough to be discharged from the emergency clinic; nevertheless, follow-up is essential to ensure a full recovery. During restoration, the guardians should be informed on how to avoid malnutrition from reoccurring (for example, preparation of khichuri and halwa as in add-on 8) and a strategy should be developed with the guardians for follow-up talks before to reoccurring (for example, preparation of khichuri and halwa as in add-on 8). A strategy should be developed with the guardians for follow-up talks before release.

### **These are the Criteria for discharge:**

In areas where there is no community-based outpatient care, discharge may be given if the following criteria are present:

<b>Criteria for discharge from inpatient care in areas where there is no community-based outpatient care</b>	
Child	<ul style="list-style-type: none"> <li>• WHZ <math>\geq 2</math></li> <li>• Oedema has resolved</li> <li>• No more infections and medical complications</li> <li>• Immunization is completed or planned</li> </ul>
Mother	<ul style="list-style-type: none"> <li>• Know how to: <ul style="list-style-type: none"> <li>○ Prepare homemade balanced diet &amp; to feed the child</li> <li>○ Give home treatment for diarrhea</li> <li>○ Recognize the danger signs for seeking medical assistance</li> </ul> </li> <li>• Advice for follow up</li> </ul>

### **Follow Up:**

Follow up visit at 1 week after discharge in a treated health facility or nearby public (CC, UH&FWC, IMCI-Nutrition corner, EPI center etc.) or NGO facilities for follow up

- 1week, 2week, 1 month, 3 months and then every 3months thereafter until WHZ becomes >1

- Enroll in CMAM programme.
- Attend monthly GMP sessions at health centers (CC, UH&FWC, IMCI-Nutrition corner, EPI Centre etc.) or NGO facilities up to 5yrs of child age.
- Enroll in the Safety net programme.

### 7.1 Vitamin A deficiency:

Children suffering from vitamin A deficiency are likely to be photophobic and have closed eyes. It is essential to examine the eyes very gently to prevent damage and rupture. All kids ought to have their eyes inspected cautiously, what's more, tenderly.

Vitamin A on days 1, 2 and 14:

Table 7: If the child shows any eye signs of deficiency, given orally:

Age	Amount
Children 0-5 months	50000 IU
Children 6-12 months	100000 IU
Children >12 months	200000 IU

### 7.2 Dermatosis signs:

- Hypo or hyperpigmentation
- Ulceration
- Desquamation
- Exudative lesions often with the secondary infection, including candida.

### 7.3 Helminthiasis:

Treatment of helminth contaminations ought to be deferred until the treatment recovery period. Give a solitary portion of any of the accompanies in anthelmintics.

- Children aged 12-23 months – 200mg albendazole
- Children aged >24 months – 400mg albendazole
- Children aged >24 months- 100mg albendazole twice daily for any age – 10mg/kg pyrantel pamoate.

Osmotic Diarrhea might be suspected if the Diarrhea worsens significantly in small kids with Diarrhea who are given F-75 arranged with the milk powder, which has somewhat higher osmolality.

In these cases:

Using low osmolar cereal-based f-75 o After that, introduce F-100 gradually.



#### **7.4 Tuberculosis:**

If tuberculosis is strongly suspected (adult contacts with TB patients, poor growth despite adequate nutrition, unrelenting chronic cough (>2 weeks), and chest function that does not respond to conventional medications).

- o Perform a Mantoux test
- o Then, if possible, a chest X-ray

### 8.1 Failure to respond to treatment:

Failure to respond is identified by high mortality and low weight gain during the rehabilitation stage.

And case fatality rate (CFR) is categorized as follows:

Table 8: Case fatality rate:

Category	CFR
Unacceptable	>20%
Poor	11-20%
Moderate	5-10%
Good	<5%

#### If mortality is >5%, determine whether the majority of deaths occur:

- Within 24 hours: consider untreated or deferred treatment of hypoglycemia, hypothermia, septicemia, severe weakness or erroneous rehydration liquid or volume or overuse of IV liquids.
- Within 72 hours: check whether the feed volume is excessively high or some unacceptable formulation is utilized; check whether potassium and right antiinfection agents were given.
- Around evening time: think about hypothermia from lacking covers, no evening takes care of.
- When switching to get up to speed F-100: think about too fast a change
- After 7 days: consider clinic obtained sepsis.

### 8.2 Low weight gain during the rehabilitation phase:

Ensure uniform weighing in hospitals. Weighing scales daily calibration

Low weight gain is categorized as follows:

Table 9: Low weight gain is categorized as follows:

Category	Phase
Poor	<5 g/kg/d
Moderate	5-10 g/kg/d
Good	>10g/kg/d

If weight gain is <5g/kg/d, determine:

- If this is for all cases (needs major management overhaul of the Nutrition Unit.
- If this is for specific cases (reassess child as for a new admission, including screening for infections including TB, urinary tract infection, and ear infection).

The possible reason for poor weight gain:

- Night feeds are one of the main reasons for poor weight gain
- The target of energy and protein intakes are gained
- Feeding Methods: Is the kid fed frequently and offered unlimited amounts
- Quality of care: Are caregivers or staff motivated /gentle/loving?
- If providing family foods, there are properly modified to provide >100kcal/100g
- Adequate composition of multivitamin and shelf life
- If giving family foods, they are suitably modified to provide >100 kcal/100g (if not, re-modify

**9.1 Discharge Before Complete recovery:**

When a child's WHZ > 2 is at 80 percent, he or she is regarded to have recovered and is ready to be released. If supervision is a possible option, prior release may be considered for certain children. Only if the following conditions are met could domiciliary consideration or facility-based therapy be considered:

**The child:**

- Is aged > 12 months
- Has lost oedema
- Has completed antibiotic treatment
- Has good appetite and good weight gain
- Has taken potassium, magnesium, mineral and vitamin supplement for 2 weeks (or continuing supplementation at home is possible)

**The Mother/caregiver:**

- Is not employed outside the home
- Is specifically trained to give appropriate feeding (type amount and frequency)
- Has the financial resources to feed the child
- Lives within easy reach of the hospital for urgent readmission if the child becomes ill
- Can be visited weekly
- Is trained to give structured play therapy
- Is motivated to follow the advice again

**Local Health Workers are:**

- Must be trained to support home care
- Should definitely be trained to examine the child clinically at home to decide when to refer him or her back to the clinic
- Motivation.

### **10.1 Emergency Treatment of shock and very severe anemia:**

Serious dehydration and septic shock are hard to separate on clinical signs alone.

Indications of septic shock may include:

- Indications of dehydration, however, without a history of watery looseness of the bowels
- Hypothermia or hypoglycemia
- Children with a lack of hydration will react to IV liquids, while those with septic shock and no parchedness may not react.

#### **Diagnosis of shock is based on the following**

**criteria:** ○ lethargic or oblivious and

- has cold hands furthermore all things considered
- Slow capillary refill (longer than 3 sec)
- Weak or rapid pulse To

#### **Start Treatment:**

- Provide oxygen
- Provide sterile 10% glucose by IV ○ Give IV fluid at 20ml/kg over one hour
- Measure and monitor pulse and respiratory rates in every 30 minutes
- Provide antibiotics
- Keep the kid warm

#### **If Improvements are seen:**

○ Should repeat 20ml/kg over 1 hour

- After that, switch to oral or NG rehydration with ReSoMal, 10ml/kg/h in alternate hours with starter F-75 for up to 10 hours
- Continue feeding with starter F-75

#### **If the child fails to improve:**

- Provide maintenance IV fluids while waiting for blood
- When blood is available, transfuse fresh whole blood at 10ml/kg slowly over 3 hours
- After that, if sepsis is present, it should be treated with antibiotics.

Throughout this chapter, I've included all of the critical tables required for the care of a severely malnourished kid, as suggested by the Bangladesh national standards for facility-based treatment. This table makes it simple to calculate or find out what the child growth standard is, how to make electrolyte mineral solution, which recipes are used for f-75 and f-100 formula, how much f-75 is needed for an oedema child, and how to keep monitoring a recently discharged severe acute malnutrition child, all with a single glance.

### 11.1 WHO 2006 child growth standards:

Table 10: WHO 2006 Child Growth Standards

Boys weight (kg)				Height			Girl's weight (kg)		
-3SD	-2SD	-1SD	Median	(cm)	Median	-1SD	-2SD	-3SD	
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

## 11.2 Electrolyte-mineral solution:

Weigh the following ingredients and makeup to 2500 ml. Add 20 ml of electrolyte-mineral solution to 1000 ml of milk feed.

Table 11: Recipe for Mineral Solution

Minerals	Quantity (g)	Molar content of 20 ml
Potassium Chloride: KCl	224	24 millimole
Tripotassium Citrate: C <sub>6</sub> H <sub>5</sub> K <sub>3</sub> O <sub>7</sub> .H <sub>2</sub> O	81	2 millimol
Magnesium Chloride: MgCl <sub>2</sub> .6H <sub>2</sub> O	76	3 millimol
Zinc Acetate: Zn (CH <sub>3</sub> COO) <sub>2</sub> .2H <sub>2</sub> O	8.2	300 micromol
Copper Sulphate: CuSO <sub>4</sub> .5H <sub>2</sub> O	1.4	45 micromol
Water: make up to	2500 ml	

## 11.3 Recipes for starter (F-75) and catch-up (F-100) formulas:

This formula is made up of where cereal flour is available. In DSH hospital, a senior nutritionist teaches us how to make f-75 and f-100 recipes practically.

Table 12: F-75 Recipes

Type of milk	Ingredients	Amount for F-75
Dried whole milk	Dried whole milk	35 g
	Sugar	70 g
	Cereal flour*	35 g
	Vegetable (e.g., Soybean) oil	20 g (or 20 ml)

	Electrolyte Mineral mix	20 ml
	Water: make up to	1000 ml

#### 11.4 F-75 recipes if cereal flour and/or cooking facilities are unavailable and F100 recipes

There are certain areas where cereal flour is not accessible. Hence this formula is made up of such places.

Table: 13 F-75 Recipes When Cereal Flour Is Not Available

Type of milk	Ingredients	Amount for F-75	Amount for F-100
Dried whole milk	Dried whole milk	35 g	110 g
	Sugar	100 g	50 g
	Vegetable oil	20 g (or 20 ml)	30 g (or 35 ml)
	Electrolyte/mineral mix	20 ml	20 ml
	Water: make up to	1000 ml	1000 ml
Cow's milk (Fresh of long life)	Full-cream cow's milk (fresh of long life)	300 ml	880 ml
	Sugar	100 g	75 g
	Vegetable oil	20 g (or 20 ml)	20 g (or 20 ml)
	Electrolyte/mineral mix	20 ml	20 ml
	Water: make up to	1000 ml	1000 ml



### 11.5: F-75 feed volumes for children with Severe Oedema:

F-75 feed volumes for children with severe oedema are given below. For children without severe (+++) oedema

### 11.6: Range of volumes for free feeding with F-100

Table 15: Range of volumes per 4 hourly of F-100 (6 feeds daily)

Weight of child kg	Minimum (ml)	Maximum (ml)	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
<sup>a</sup> Volumes in these columns are rounded to the nearest 5 ml				

### 11.7: Monitoring Record:

Monitor respiratory rate, beat rate and temperature 2-4 hourly until after progress to F-100; furthermore, the patient is steady. At that point, checking might be less incessant (e.g., twice every day). Threat Signs: Watch for expanding heartbeat and breaths, quick or troublesome breathing, unexpected increment or decline in temperature, axillary temperature <35° C, and different changes in condition.

## Chapter 12 Basic about MAM

### 12.1 Community Based management of acute malnutrition (CMAM)

We had gained some basic understanding regarding community-based management before our final internship at DSH Hospital. This knowledge was useful during our last internship, which is listed in the next section.

The components of community-based management of acute malnutrition:

1. Community outreach activities.
2. Local area-based administration of youngsters with SAM without inconveniences.
3. Inpatient care of kids with SAM and with entanglements until balanced out.
4. Community-based management of youngsters with MAM.

## 12.2 Enrollment and discharge criteria for community-based management of SAM, MAM and acutely

	Enrollment criteria	
Inpatient care	Community-based management (outpatient Care)	Community-based management (Outpatient care)
Sam with complications (children 6-59 months) AND infant <6 months.	SAM without complications (Children 6-59 months)	MAM (children 6-59 months) and acutely malnourished PLW

## 12.3 Community Outreach Activities:

The objective of community outreach activities:

- Promote and support appropriate IYCF practices
- Promote understanding about the intense unhealthiness
- Augment program coverage
- Find kids with SAM
- Find kids with MAM if these kids are to be remembered for the community-based program
- Find intensely malnourished PLW in the event that they are to be remembered for a community based
- Promote solid connections among avoidance and treatment so the basic causes can likewise be tended to.

## 12.4 Identification and referral of children with acute malnutrition and acutely malnourished PLW at community outpatient site

Target Group	Finding	Action
6-59 months	<b>MUAC &lt; 115mm (RED)</b>	<ul style="list-style-type: none"> <li>☞ Refer to outpatient site</li> <li><b>CHW providing direct treatment</b></li> <li>☞ Determine complications</li> <li>☞ Refer to inpatient care if SAM with complications</li> <li>☞ Provide nutritional management (NM) and medical care for SAM without complications</li> </ul>
6-59 months	<b>Bi pedal oedema (any grade)</b>	<ul style="list-style-type: none"> <li>☞ Refer to outpatient site</li> <li><b>CHW providing direct treatment</b></li> <li>☞ Refer to inpatient care</li> </ul>
6-59 months	<b>MUAC 115mm - &lt; 125mm (YELLOW)</b>	<ul style="list-style-type: none"> <li>☞ Refer to outpatient site</li> <li><b>CHW providing direct treatment</b></li> <li>☞ Management of MAM and medical care for MAM/or practical guidance on use of local foods</li> </ul>
Pregnant and lactating women	<b>MUAC &lt;210 mm</b>	<ul style="list-style-type: none"> <li>☞ Refer to outpatient site</li> <li><b>CHW providing direct treatment</b></li> <li>☞ Provide nutritional management (NM) and medical care for/or practical guidance on use of local foods</li> </ul>
Infants < 6months*	<ul style="list-style-type: none"> <li>☉ <b>Visibly wasted. Weight for length less than -3 Z-score</b></li> <li>or</li> <li>☉ <b>Infants with bipedal oedema</b></li> <li>☉ <b>Infants too weak or feeble to suckle with failure to gain weight</b></li> </ul>	<ul style="list-style-type: none"> <li>☞ Refer to outpatient site for evaluation (if available)</li> <li><b>CHW providing direct treatment</b></li> <li>☞ Refer to inpatient care</li> </ul>

### Follow up visit:

CHWs assume a significant part in tracing kids who are absent or have defaulted and

Urging the parental figures to return. Youngsters who have static weight or shed pounds are also required to follow up at home. For follow up to be effective, there must be a good linkage between the outpatient site and the community health workers and volunteers. CHWs ought to be present at the outpatient site to:

1. Assist the Health Worker at the outpatient site/outreach site
2. Follow up youngsters who are absent or defaulted or if there are different purposes behind follow up as controlled by the health care provider
3. ensure kids referred for additional consideration/different projects

### **13.1 Discussion:**

This paper aims to analyze the influence of infectious disorders, such as malnutrition, on children's development. According to the findings of this research, nutritional and treatments are needed. Furthermore, the division industry in Bangladesh can be a source of public health and development. DSH is a pediatric specialty hospital specializing treating children, and this facility can provide better care to the children and financial assistance. The government is the one that offers financial assistance to tertiary-level public hospitals. The primary objective of this project is to our nation gains more significant health advantages from this hospital's established and enhanced children's health-related aspects, which are implemented across the country.

### **13.2 Conclusion:**

In addition to providing valuable experience, this internship at DSH was well-organized. Having gained new information and abilities, I believe I have been able to apply them to professional work in practical and extracurricular activities across all sections. When it comes to children's health, malnutrition has a negative influence that may lead to a rise in children's mortality and morbidity rates in developing nations such as Bangladesh and low-income countries. Malaria and hunger have afflicted the majority of the youngsters there. Approximately 80% of the youngsters are from Bangladesh's rural regions. As a result of a lack of appropriate information and treatment, they are impacted by this deadly illness. Work is being done in collaboration with a few volunteer groups and the Governments of Bangladesh, as well as financial assistance from the United Nations Children's Fund (UNICEF), the United Kingdom (UK), and the World Vision organization, to minimize the risk of child death and morbidity. Efforts to reduce diarrheal illness and malnutrition-related sickness in our nation are pursued. While providing treatment for diarrheal sickness, the organization also works to improve the nutritional condition of children in the community. They feed malnourished children with various foods such as F-75, F-100, milk suji, rice suji, khichuri, halwa, and other dishes. Children's caregiver

counselling, dietary guidance, and encouragement are also available via this organization. Overall, the hospital's primary mission is to provide better care to its patients.

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