

FACILITY BASED MANAGEMENT OF CHILDREN WITH SEVERE ACUTE MALNUTRITION

According to the National survey (NFHS-3, 2005-06)

1. 43 percent children under age of five years are underweight (low weight for age).
2. 48 percent children under five are stunted (low height for age).
3. 20 percent children under five years of age are wasted (low weight for height); over 6 per cent of these children are severely wasted ($<-3SD$). Since 'wasting' denotes acute malnutrition, these children are said to have Severe Acute Malnutrition or SAM.

In addition

1. Nearly 70 percent children (6-59 months) have anaemia. of these 26 percent are have mild anaemia,
2. 40 percent have moderate anaemia and 3 percent have severe anaemia.
3. 22 percent newborns have low birth weight (below 2.5 Kgs).

Undernutrition is associated with high rates of mortality and morbidity and is an underlying factor in almost one-third to half of all children under five years who die each year of preventable causes. Strong evidence exists on synergism between undernutrition and child mortality due to common childhood illnesses including diarrhoea, acute respiratory infections, malaria and measles. To prevent deaths due to severe acute malnutrition (SAM) specialised treatment and prevention interventions are required.

How can undernutrition be measured?

Anthropometry is a widely used, inexpensive and non-invasive measure of the general nutritional status of an individual or a population group. The three commonly used anthropometric indices are:

1. Weight-For-Age (WFA).
2. Length-For-Age or Height-For-Age (HFA).
3. Weight-For-length or Weight-For-Height (WFH).

SEVERE ACUTE MALNUTRITION (SAM) Severe acute malnutrition is defined by:

1. Weight-for-height/length (Z- score below $-3SD$ of the median WHO child growth standards),
2. Mid-upper arm circumference <115 mm, or
3. Presence of nutritional oedema.

Using the new WHO Growth Standards in developing country situations results in increase and earlier detection of malnourished children and in a less severe state; thereby providing an opportunity for faster recovery and lower case fatality rates.

Nutrition Rehabilitation Center (NRC) is a unit in a health facility where children with Severe Acute Malnutrition (SAM) are admitted and managed with the intention to improve the quality of care being provided to children with SAM and to reduce child mortality.. Children are admitted as per the defined admission criteria and provided with medical and nutritional therapeutic care.

Services provided at the NRC facility:

1. 24 hour care and monitoring of the child.
2. Treatment of medical complications.
3. Therapeutic feeding.
4. Providing sensory stimulation and emotional care.
5. Social assessment of the family to identify and
6. Address contributing factors.
7. Counselling on appropriate feeding, care and hygiene.
8. Demonstration and practice- by -doing on the preparation of energy dense child foods using locally available, culturally acceptable and affordable food items.
9. Follow up of children discharged from the facility.

Screening of children coming to OPDs /inpatient wards in health facilities should be done using weight for height/ length growth charts provided.

Admission criteria for Children 6-59 months:

Any of the following:

1. MUAC <115mm with or without any grade of oedema; or
2. Weight For Height/ length < -3 SD with or without any grade of oedema; or
3. Bilateral pitting oedema +/-++ (children with oedema +++ always need inpatient care)

WITH

Any of the following complications:

1. Anorexia (Loss of appetite)
2. Fever (39 degree c) or Hypothermia (<35 c)
3. Persistent vomiting
4. Severe dehydration based on history and clinical examination
5. Not alert, very weak, apathetic, unconscious, convulsions
6. Hypoglycemia
7. Severe Anemia (severe palmar pallor)
8. Severe pneumonia
9. Extensive superficial infection requiring I/M medications

Any other general sign that a clinician thinks requires admission for further assessment or care in addition to above criteria if the caregiver is unable to take care of the child at home, the child should be admitted.

The principles of management of SAM are based on 3 phases:

1. **Stabilisation Phase:** Children with SAM without an adequate appetite and/or a major medical complication are stabilized in an in-patient facility. This phase usually lasts for 1–2 days. The feeding formula used during this phase is Starter diet which promotes recovery of normal metabolic function and nutrition-electrolytic balance. All children must be carefully monitored for signs of overfeeding or over hydration in this phase.
2. **Transition Phase:** This phase is the subsequent part of the stabilization phase and usually lasts for 2-3 days. The transition phase is intended to ensure that the child is clinically stable and can tolerate an increased energy and protein intake. The only difference in management of the child in transition phase is the change in type of diet. There is gradual transition from Starter diet to catch up diet .The quantity of catch up diet given is equal o the quantity of Starter diet given in stabilization Phase.
3. **Rehabilitation Phase:** Once children with SAM have recovered their appetite and received treatment for medical complications they enter Rehabilitation Phase. The aim is to promote rapid weight gain, stimulate emotional and physical development and prepare the child for normal feeding at home.

Ten steps for management of SAM

1. Treat/prevent hypoglycaemia
2. Treat/prevent hypothermia
3. Treat/prevent dehydration
4. Correct imbalance of electrolytes
5. Treat infections
6. Correct deficiencies of micronutrients
7. Start cautious feeding
8. Rebuild wasted tissues (catch-up growth)
9. Provide loving care and play
10. Prepare for follow-up

Home based management of SAM children

Children suffering from SAM require management in hospital. Extrapolating the under-three years prevalence of SAM to the current total population of India of 1200 million, it is expected that 2.8 million under-five children will be suffering from SAM. In India, there are only 0.9 million total hospital beds. Hence home-based management is an unavoidable, acceptable, cost-effective alternative for a proportion of these subjects and it reduces morbidity and mortality.

Home based management should be option for “uncomplicated” child who is (i) Alert, (ii) with preserved appetite, (iii) clinically assessed to be well (absence of general danger signs and severe anemia, cough and difficult/ fast breathing, cold to touch and severe dehydration), and (iv) living in a conducive home environment.

The most peripheral child health worker (AWW, ANMs) should identify SAM (severely malnourished children) through weighing as well as MUAC. All possible contact opportunities with children should be exploited including home visits, Anganwadis, immunization outreach sessions, Subcentre, PHC and CHC clinics.

1. These children should be offered energy dense home based (prepared/ modified from the family pot) diets. Feeding should be frequent (6 to 8 times per 24 hours), active, and hygienic.
2. Oral antibiotics (co-trimoxazole or ampicillin) should be administered for 7 days to all SAM children, if not received earlier.
3. Micronutrients and minerals should be given after advice from the doctor.
4. Single dose deworming should be given as per IMNCI guidelines
5. Hypothermia should be prevented by maintaining environmental temperature and covering the child well, particularly during night.
6. The child should receive complete immunization as per UIP schedule
7. Nutritional counselling should be given to mothers as per IMNCI, primarily by AWW but ANM and doctor should strengthen this counselling

Imparting health education, improving household food security, promoting community participation, motivation and nutritional counselling should be integral components of home based care.

The concerned health staff and doctors managing sick children are directed to take weight and height/ length of every child below 5 years age and plot it on provided WHO growth charts. A separate register is to be maintained for data of children who fulfil the admission criteria, and compiled information should be sent every month to the office of MD NRHM in the Performa already provided, even if there is no admission in any month nil report has to be submitted.