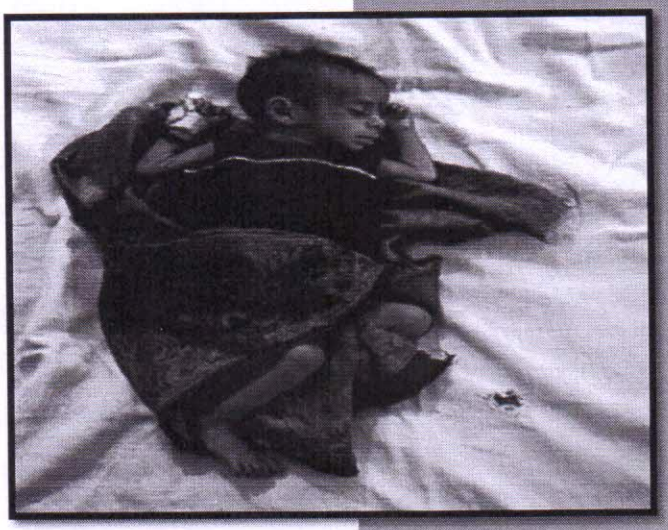
# Standard Operating Procedures for District Hospital - Uttar Pradesh

## Nutrition Rehabilitation Center



Quality Assurance Division
SPMU, NHM, UP

# Objectives of NRC

1. **To ensure availability of essential medicines, micronutrients and Nutritious food in NRC.**
2. **To ensure availability of appropriate anthropometric and diagnostic equipment for correct diagnosis of SAM and associated complications.**
3. **To conform to SAM management protocols for casse management at NRC**
4. **To strictly follow the admission and criteria for discharge of the child.**
5. **To ensure empathetic & courteous behaviour of the staff.**
6. **To ensure hygiene and cleanliness as per IP & BMW management protocols.**
7. **To ensure use of Personal Protective Equipments during all procedures.**

# SOP 7: Nutrition Rehabilitation Center

## 1. Purpose:

The overall aim of the Program is to improve the nutritional status of children through provision of quality health and nutritional care to children below five years. This in turn will help in timely action at facility, community and household level to prevent and treat malnutrition. The key objectives of facility based management of SAM are:

- To provide clinical management and reduce mortality among children with severe acute malnutrition, particularly among those with medical complications.
- To promote physical and psychosocial growth of children with severe acute malnutrition (SAM)
- To build the capacity of mothers and other care givers in appropriate feeding and caring practices for infants and young children
- To identify the social factors that contributed to the child slipping into severe acute malnutrition.

## 2. Scope:

NRC provides curative as well as preventive services for both child and mother to combat malnutrition. Counseling is the important component of NRC which is meant to create awareness and promote positive child feeding and caregiving practices among mothers so that ultimately society is benefitted.

## 3. Structure and Human resource :

Typically an NRC consists is a 10 bed facility consists of a ward, play area and kitchen. Where the quality of care is provided with support of technical and non technical staff.

For 10 bedded NRC sanctioned staff as per GOI protocol is:

1. Medical Officer-1
2. Feeding Demonstrator-1
3. Staff Nurse- 4
4. Cook- 1
5. Care Taker- 1
6. Cleaner – 1

For 6 bedded NRC number of staff nurses is 3

## 4. Procedure:

| Sl. No. | Activity | Responsibility | Reference Document / Record |
|---|---|---|---|
| 1. | **Admission Criteria (6-59 months)** | | |
| | • Weight / Length or height or W/L or W/H Z score < -3SD (WHO-2005 standards) **And / Or**<br>• MUAC <11.5cm **And / Or** | 1. Medical Officer<br>2.Feeding | 1. NRC register<br>2. SAM |

| Sl. No. | Activity | Responsibility | Reference Document / Record |
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| | • Presence of bilateral oedema<br>Children with following medical complications are admitted in a Nutritional Rehabilitation Centre:<br>Presence of any emergency signs like:<br>➢ Oedema<br>➢ Persistent vomiting<br>➢ Very weak, apathetic, lethargic<br>➢ Anorexia (loss of appetite)<br>➢ Hypoglycemia (BG <54mg/dl)<br>➢ Fever (Auxiliary temperature > 38.5 degree Celsius)<br>➢ Children with fast breathing / chest in drawing/cyanosis(Fast breathing is said to be present if number of breaths per minute is 60 or more in children up to 2 months, 50 or more in children 2 months to 1 year and 40 or more in children 1 year to 5 years).<br>➢ Extensive skin lesions, eye lesions, post-measles states<br>➢ Diarrhoea with dehydration based on history and clinical sign<br>➢ Severe anemia<br>➢ Hypothermia (Auxiliary temperature <35.5 degree centigrade)<br><br>**Admission Criteria for (0-6 month):**<br>Any infant more than 45 cm in length who has following features is treated as severe acute malnutrition:<br>• Weight-for-height <- 3 SD; and /or<br>• Visible severe wasting; and/or<br>• Oedema of both feet.<br>• MUAC is not used as a criteria for children under 6 months<br>Children who meet the admission criteria (MUAC <11.5 cm), bilateral pitting oedema, weight for height <-3SD and poor appetite) are provided institutional care using the standard treatment cost. The referred cases are examined in the OPD / Casualty.<br><br>Children with severe medical complications such as septicemia, unconsciousness, respiratory distress etc. are admitted to the Pediatric ward first and shifted to the NRC after stabilization. On admission each child is provided with a | Demonstrator<br>3. Staff Nurse | Chart<br>3. NRC MIS |

| Sl. No. | Activity | Responsibility | Reference Document / Record |
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| | unique number for subsequent follow up. The children admitted in NRC are provided treatment for a period of 10-28 days depending on the treatment response and ability of child to achieve 15% weight gain over admission weight Generally most children reach the discharge criteria in 14 days. | | |
| **2.** | **Anthropometry Measurement:** | | |
| | **Measurement of MUAC:**<br>➢ Alternative measure of thinness<br>➢ Used for children 6-59 months<br>➢ Measured on left upper arm<br>➢ Indicates muscle mass and fat reserves<br>➢ Is age independent<br>➢ Best predictor of mortality<br><br>**MUAC Procedure:**<br>➢ Child's arm is kept at 90 degrees to mark a mid point between the tip of the shoulder and elbow.<br>➢ Child's arm is straightened and tape is wrapped around the arm at the marked midpoint<br>➢ Proper tension of tape is ensured – not too tight or too loose<br>➢ Measurement is read to the nearest 0.1cm at correct position with correct tension. Measurement is recorded immediately<br><br>**Procedure for measurement of Weight:**<br>• Preferably by an electronic scale which can measure up to 3 decimal places<br>• Calibrated weighing machine is to be used<br>• Weighing balance is kept on flat surface<br>• Each time it is adjusted to zero<br>• Pan is kept clean<br>• Child is weighed with minimum clothing<br>• Child is weighed everyday at fixed time of the day at least 2 hours prior or post meal consumption<br>• Weight is recorded to the nearest gram<br>• Machine is standardized regularly<br>Weight is plotted in the daily weight chart in the SAM chart which is used for explaining the progress of the child to the mother | 1. Medical Officer<br>2.Feeding Demonstrator<br>3. Staff Nurse | 1. NRC register<br>2. SAM Chart<br>3. NRC MIS |

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| | **Measurement of Length / Height:**<br>➢ For length measurement infantometer is used whereas for measuring height stadiometer is used<br>➢ It is put (infantometer)/ mounted (stadiometer- hanging type) on flat surface<br>➢ For children less than 87cm or less than 2 years length is measured.<br>➢ For children more than 87cm or more than 2 years height is measured.<br>➢ If a child is physically challenged or he is not able to stand due to any reason then length is taken and 0.7 cm is subtracted from length to convert the length into height<br>➢ Board is cleaned daily with disinfectant<br>➢ Record is taken closest to 0.1 cm | | |
| | **Initial Assessment- Detail history**<br>Food/fluid & diet before illness, Breast feeding / loss of appetite<br>• Duration, frequency of diarrhea / vomiting; Type of Diarrhea<br>• Fever, symptoms suggesting different sites infection<br>• Chronic cough – contact with TB,<br>• Recent H/O measles, suspected HIV<br>• Anthropometry<br>• Signs of Dehydration<br>• Signs of shock (cold hands & feet, prolonged CRT, lethargy)<br>• altered level of consciousness<br>• Severe pallor<br>• Fever (low/ high)<br>• Mouth ulcers, skin lesions<br>• Vitamin A deficiencies<br>• Signs / symptoms of HIV | 1. Medical Officer<br>2.Feeding Demonstrator<br>3. Staff Nurse | 1. NRC register<br>2. SAM Chart |
| | **Management of Complication** | | |
| | • Treatment/Prevention of Hypoglycemia, Hypothermia and Dehydration<br>• Electrolyte imbalance is corrected<br>• Treatment of infection | 1. Medical Officer<br>2. Staff Nurse | 1. NRC register<br>2. SAM Chart |
| | **Appetite Test:** | | |

<table>
<tr><th>Sl. No.</th><th>Activity</th><th>Responsibility</th><th>Reference Document / Record</th></tr>
<tr><td></td><td>➢ For 7-12 months (Formula100 is used for conducting appetite test)<br>➢ For 13-59 months (Therapeutic feed is used for appetite test)</td><td></td><td></td></tr>
<tr><td></td><td>Therapeutic Feed Preparation:<br>1. Roasted ground nuts 1000 gm<br>2. Milk powder 1200 gm<br>3. Sugar 1120 gm<br>4. Coconut oil 600 gm<br>Method:<br>1. Roasted ground nuts are grinded them in mixer<br>2. Sugar is grinded separately or with roasted ground nut<br>3. Ground nut, sugar, milk powder and coconut oil are mixed.<br>4. The mixture is stored in air tight container With a label indicating date of preparation<br>5. It is prepared in quantity sufficient for one week only to ensure the quality of feed<br>6. Store in refrigerator.</td><td>1.Feeding Demonstrator<br>2.Staff Nurse</td><td>3. NRC register<br>4. SAM Chart<br>5. NRC MIS</td></tr>
<tr><td></td><td>Appetite Test:</td><td></td><td></td></tr>
<tr><td></td><td>To pass the appetite test child has to completely consume the given therapeutic feed.
<table>
<tr><th>Body weight</th><th>Weight in gms. Of therapeutic feed (TF)</th></tr>
<tr><td><4 Kg</td><td>15 gm</td></tr>
<tr><td>4-7 Kg</td><td>25 gm</td></tr>
<tr><td>7-10 Kg.</td><td>33 gm</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>3.</td><td>Feeding Protocols:</td><td></td><td></td></tr>
<tr><td></td><td>Feeding Phases:<br>Stabilization Phase: F 75 (100ml feed contains 75 Kcal)<br>Transition Phase: F 100 (100ml feed contains 100 Kcal)<br>Rehabilitation Phase: F 100 + Home Based Diet<br>☐ Stabilization phase 1<br>Patients without an adequate appetite and /or with Medical complications.<br>☐ Transition phase<br>Because a sudden increase in amount of diet before physiological functions is restored can be dangerous and lead to electrolyte imbalance.</td><td>1.Feeding Demonstrator</td><td>1. NRC register<br>2. SAM Chart</td></tr>
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|---|---|---|---|
| | ☐ **Rehabilitation phase**<br>Patients have good appetite and no major medical complications. Patients who present with good appetite are admitted directly into Rehabilitation phase. | | |
| 4. | **Laboratory Investigation:**<br>• Blood glucose<br>• Hemoglobin or packed cell volume in children with severe palmar pallor<br>• Serum electrolytes eg. (sodium, potassium, and calcium whenever possible)<br><br>**Screening for infections:**<br>• Total and differential leukocyte count, blood culture<br>• Urine routine examination<br>• Urine culture<br>• Chest x-ray<br>• Mantoux test<br>• Screening for HIV after counseling (only when suspected, based on history and clinical signs and symptoms)<br><br>Any other specific test required based on geographical location or clinical presentation e.g. Celiac disease, malaria etc. | 1.Medical Officer<br>2.Staff Nurse | 1. NRC register<br>**2.** SAM Chart |
| | **Essential Medicines and Micro Nutrient:** | | |
| | 1. Iron<br>2. Folic Acid<br>3. Potassium Chloride<br>4. Magnesium Sulphate<br>5. Zinc Sulphate<br>6. Folic Acid<br>7. Vitamin A<br>8. Albendazole<br>9. Multivitamin<br>10. Antibiotics | | 1. NRC register<br>**2.** SAM Chart |
| 5. | **Social and emotional development through Sensory stimulation using paly therapy**<br>• Severe acute malnutrition affects mental and behavioural development, which can be reversed by appropriate treatment including sensory stimulation | 1. Feeding demonstrator<br>2. Staff nurse<br>3. Caretaker | |

| Sl. No. | Activity | Responsibility | Reference Document / Record |
|---|---|---|---|
| | and emotional support<br>• Sensory stimulation activities and play therapy to be initiated in rehabilitation phase<br>• Play sessions are organized for a dedicated 15-30min a day with involvement of mother so that special care is continued at home<br>• Toys and locally available discarded but child friendly material to be used for play therapy | | |
| 6.. | **Counseling:** | | |
| | Counseling is an integral part of NRC program in which mothers are counselled on thematic issues on daily basis to create awareness that child does not repeatedly fall sick.<br><br>Counseling areas include nutrition, infant and young child feeding, hygiene & sanitation, family planning, vaccination, ICDS services and services offered by health department etc | 1.Feeding Demonstrator<br>2.Staff Nurse | 1. SAM Chart |
| | **Discharge Criteria** | | |
| | Discharge criterion for all infants and children is 15% (15% of weight at admission) weight gain and no signs of illness.<br>• This is achieved through facility based care in NRC when community based programme is not in place. | 1. Medical Officer<br>2.Feeding Demonstrator<br>3. Staff Nurse | 1. NRC register<br>2. SAM Chart<br>3. Discharge Ticket<br>4. NRC MIS |
| | **Discharging the child from Nutrition Rehabilitation Centre**<br>• Oedema has resolved<br>• Child has achieved weight gain of >15% (15% of admission weight) and has satisfactory weight gain for 3 consecutive days(>5gms /kg/day)<br>• Child is eating an adequate amount of nutritious food that the mother can prepare at home.<br>• All infections and other medical complications have been treated<br>• Child is provided with micronutrients<br>• Immunization status is updated<br><br>In context of Mother/Care giver | | |

| Sl. No. | Activity | Responsibility | Reference Document / Record |
|---|---|---|---|
| | • She is taught how to prepare appropriate food and feed the child.<br>• She is taught how to give prescribed medications, vitamins, folic acid and iron at home.<br>• She is taught how to make appropriate toys at home and maintain hygiene of toys so that the child does not catch any infection while playing with it.<br>• She is taught how to give home treatment for diarrhoea, fever, and acute respiratory infections and how to recognize the signs for which medical assistance must be sought.<br>• Follow-up plan is discussed and understood | | |
| | **Follow ups:** This program has 4 follow ups at 15 days interval. | | 1. NRC register<br>2. SAM Chart<br>3. Follow up card<br>4. NRC MIS |
| | **Cash Benefits: Rs.** | | |
| | Mother will get Rs.100/- per day for no. of days of stay in NRC (Rs50 as cash and Rs. 50 in form of 2 meals).<br>ASHA / AWW will get Rs. 150/- child for bringing for admission (Rs. 50) and for 4 follow-ups (@Rs. 25 per follow-up).<br>During follow ups mother will get Rs. 100/- per follow up and Rs. 40/- for child's diet. | 1.Feeding Demonstrator<br>2.Hospital Accountant/ Clerk | 1. Wage compensation register<br>2. Accountant maintains register for all records. |

**7. Records:**

| S. No. | Name of Records |
|---|---|
| 1. | NRC Register |
| 2. | SAM Chart |
| 3. | NRC MIS |
| 4. | Discharge ticket |
| 5. | Follow up Card |
| 6. | Monthly Report |
| 7. | Quarter Report |
| | |

**Process efficiency criteria**

| S. No. | Activity | Process Efficiency Criteria | Benchmark/Standard/Target |
|---|---|---|---|
| 1 | Utilization | Bed Occupancy Rate | >75% |
| 2 | Patient care | Cure Rate | >75% |
| 3 | Patient care | Defaulter | <15% |
| 4 | Patient care | Death | <10% |
| 5 | Patient care | Referral | |
| 6 | Patient care | Average length of stay | 2-4 weeks |
| 7 | Patient care | Average weight gain | >8gm/kg/day |