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An excellent organization to reduce malnutrition: Nutritional rehabilitation centre (NRC)

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Abstract
Poor nutrition severely hinders personal, social and national development. The problem is more obvious among the poor and disadvantaged. The ultimate consequence is millions of severely malnourished children throughout the world. In developing countries an estimated 50.6 million children under the age of five are malnourished, and those who are severely malnourished and admitted to hospital face 30-50% case fatality rate (WHO). With appropriate treatment, as described in these guidelines, this unacceptably high death rate can reduced to less than 5%. The evidence base for effective prevention and treatment is incontrovertible, but is not put into practice.

Keywords: Nutritional, rehabilitation, malnutrition, therapeutic, organization

Introduction
Malnutrition is a general term. It most often refers to under nutrition resulting from inadequate consumption, poor absorption or excessive loss of nutrients, but the term can also encompasses over-nutrition, resulting from excessive intake of specific nutrients. In subsequent text, we would use the words malnutrition and under nutrition interchangeably. An individual will experience malnutrition if the appropriate amount of, or quality of nutrients comprising for a healthy diet are not consumed for an extended period of time.

The Nutritional Rehabilitation Centre (NRC) was designed several decades back in Africa for clinical management of severe malnutrition. While there are community (both in emergency and non-emergency settings) and facility-based options for management of SAM, the latter has emerged as a state promoted and dominant model in India. Nutrition Rehabilitation Centre is a joint initiative of Department of Health and Department of Women and Child Development. NRCs were first launched as an innovative scheme, Bal Shakti Yojna, under the National Rural Health Mission (NRHM) in Madhya Pradesh (MP). Based on need to decreased malnutrition status in India, Reproductive and Child health Programme, Ministry of health and Family Welfare, Government of India in collaboration with the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO), a uniform guidelines have been drafted for maintaining standard treatment countrywide. Since its inception, 36538 SAM children out of the targeted 39,840 have been treated through the 258 NRCs set up throughout the state (Health Bulletin: Analysis Report on Critical Indicators April-Sep 2013). Similarly, many states have set up similar network of NRCs.

Objectives
1. To provide institutional care for children with acute malnutrition.
2. To promote physical, mental & social growth of children with acute malnutrition.
3. To build capacity of primary care givers in the home based management of malnourished children.
4. Sick children with malnutrition are managed in hospitals where as children without any disease are given feeding advise and regularly measured and monitored in community by FHWs and AWWs.

Status in Madhya Pradesh

The prevalence of malnutrition varies across states, with Madhya Pradesh recording the Highest rate (55 per cent) and Kerala among the lowest (27 per cent). It is estimated that two thirds of children in Madhya Pradesh are malnourished. In fact, malnutrition rates for children under five are higher here than in most countries of sub-Saharan Africa. Inextricably linked with high rates of child malnutrition is the large number of new mothers and infants who die shortly after birth.

Primary Objectives of facility based management of SAM

1. To provide clinical management and reduce mortality among children with severe acute malnutrition, particularly among those with medical complications.
2. To promote physical and psychological growth of children with severe acute malnutrition (SAM)
3. To build the capacity of mothers and other care givers in appropriate feeding and caring practices for infants and young children.
4. To identify the social factors that contributed to the child slipping into severe acute malnutrition.
5. Reduction of severe malnutrition parentage
6. Reduction of moderate malnutrition
7. Reduction of under-five mortality rate
8. Reduction of malnutrition up to 100
9. Improvement of sex ratio

Services provided at the facility

The services and care provided for the in-patient management of SAM children include:

- 24 hours care and monitoring of the child.
- Treatment of medical complications.
- Therapeutic feeding
- Providing sensory stimulation and emotional care.
- Social assessment of the family to identify and address contributing factors.
- Counselling on appropriate feeding, care and hygiene.
- Demonstration and practice-by-doing on the preparation of energy dense child foods using locally available, culturally acceptable and affordable food items.
- Follow up of children discharge from the facility.

Lead Activities of NRCs

- Early Identification of moderate malnutrition
- Early identification severe malnourished children and their admission in NRC
- Meetings with malnourished children and parents in difficult areas
- Nutritional advice to parents of malnourished children
- Promotion of infant and young child feeding
- Promotion of safe water, hygiene and sanitation
- Counselling of mother, father and mother-in-law
- Formation of clubs of mothers of malnourished children at Anganwadi centres.

NRC is a unit in health facility where children with Severe Acute Malnutrition (SAM) are admitted and managed. Children are admitted as per the defined admission criteria and provided with medical and nutritional therapeutic care. Once discharged from the NRC, the child continues to be in the defined discharge criteria from the program (described in technical guidelines).

In addition to curative care, special focus is given on timely, adequate and appropriate feeding for children; and on improving the skills of mothers and caregivers on complete age appropriate caring and feeding practices. In addition, efforts are made to build the capacity of mothers/caregivers through counselling and support to identity the nutrition and health problems in their child. In-patient management of SAM children is highly effective in reducing case fatality rates, but even under the best circumstances inpatient management will not be able to handle the entire caseload of children with SAM in a given district. Other issues may include problem of access to the health facility and long hospital stay requiring caregivers to stay away from home and work for many days.

Therefore a community based program for the management of severe acute malnutrition should be in place to complement the delivery of services by Nutrition Rehabilitation Centres. More importantly mechanisms need to be in place to regularly monitor the growth of children so that wasting and growth faltering can be detected in their early stages and corrective measures taken before the child progresses to severe grades of under nutrition.

Admission Criteria in NRC

All the samples enrolled for the present study were taken from four NRCs centres of Bhopal district. Children those were admitted in NRCs were enrolled and were followed up for the next fourteen days. In case any child left NRC before completion of fourteen days they were labelled as LAMA patient and were excluded from the study and another new patient (child) from the same NRC was enrolled and were followed up for next fourteen days.

The criteria for admission for inpatient treatment in a NRC are as follows

Children 6-59 months

- Any of the following
  - MUAC< 115 mm or 11.5 cm with or without any grade of oedema
  - WFH <-3 SD with or without any grade of oedema
  - 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 (sever palmar pallor)
  8. Severe pneumonia
  9. Extensive superficial infection requiring IM medications
  10. Any other general sign that a clinician thinks requires admission for further assessment of care
- Infants < 6 months
- Infant is too weak or feeble to suckle effectively (independently of his/her weight-for-length
- Or
- WfI (weight-for-length) <-3SD (in infants > 45 cm)
- Or
- Visible severe wasting in infants <45 cm

- Or
- Presence of oedema both feet
- Other reasons for inpatient enrolment
- Readmission: Child previously discharged from in-patient care but meets admission criteria again
- Return after default: Child who returns after default (away from in-patient care for 2 consecutive days) and meets the admission criteria.

Children were referred to NRC from Aganwadi/ VHND/ Paediatric ward etc. or had come directly to NRC but admissions were done only if the child meets the above mentioned criteria.

Infrastructure

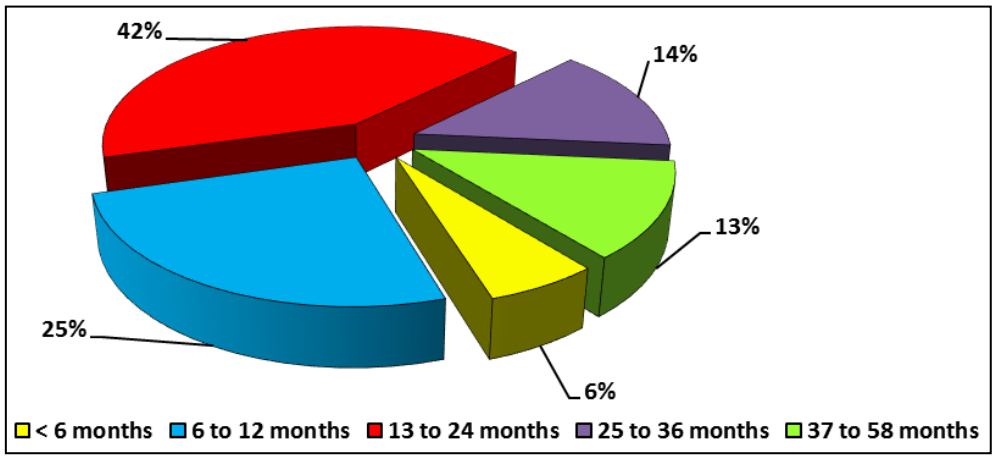
NRCs are essentially set up in district hospital campus and Community Health Centres with NRC ward of bed strength of 20 or 10, a kitchen with proper cooking and feed demonstration space and attached toilets/bathrooms. A possibility of having kitchen garden can also be explored considering the availability of space. NRC wards are painted with child friendly pictures keeping in mind the emotional and psychosocial development of child. The SAM children admitted continue their stay in NRC for 14-21 days. Four follow ups of the children discharged from NRC at an interval of 15 days is done. The criteria for discharge of children 6m-60m from the programme is 15% weight gain of the admission weight (WHO recommendation 2009).

IEC Activities

Improving community behaviour, for example in infant and young child feeding practices and child care and maternal nutrition, is an important objective of this program. Besides, there is a need to promote recognition and appreciation of severity of SAM among families. This should be achieved through IEC/BCC activities as a part of RCH/NRHM BCC strategy. The messages should be consistent with technical protocols and guidelines. Major emphasis should be laid on appropriate feeding practices and early care seeking by the families for sick children with malnutrition. Wall charts for assessment and management of sick children with SAM should be displayed in the out-patient department, in-patient department and emergency room for regular use of health providers.

Observation

The study of malnourished children was carried out in all from Nutritional Rehabilitation Centres in Bhopal District of Madhya Pradesh. Total 150 children's were examined and growth and development of the child as well as feeding practices were closely monitored. The result of the study can be presented under the following-



Percentage distribution of age of children admitted in NRC

Suggestion: The NRCs were effective in improving the condition of admitted children, but the effects were not sustained following discharge due to high drop-out rate and lack of adequate parental awareness. There is an urgent need to link these centres with community-based models for follow-up and improve health education measures to maintain the gain achieved.

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