

# Revitalizing Child Health: A Research Exploration into the Success of Facility-Based Management for Children with Severe Acute Malnutrition through Nutritional Rehabilitation

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## Abstract:

'Zero Hunger' and 'Good Health and Well – Being' are globally accepted as the crucial goals of sustainable development to be achieved by 2030. These goals are directly related to the nutritional needs of humanity. The good health and well – being of people of any country can be assured by ensuring the quality nutritional and health care provided to them at their younger age. According to UNICEF in India 20 percent of the children under the age of five years suffer from wasting due to acute malnutrition. This is a distress signal for the nation like India where the number of such children is in millions. The nation is well aware of this situation and the importance of child health and so taken initiatives to ensure the early age healthcare and nutrition. Such an initiative is National Health Mission (NHM) under which Nutrition Rehabilitation Centre (NRC) are functioning at every district hospital. At NRC nutritional treatment is provided to the children with Severe Acute Malnutrition (SAM). This paper describes the scopes of child health and nutrition in light of a success story of curing a critical case at NRC Pune, Maharashtra during the tenure of the researcher as a Nutrition Assistant.

**Key words:** Child Health, Nutrition, Nutrition Rehabilitation Centre, SAM Treatment, SAM Management

Date of Submission: 02-01-2024

Date of Acceptance: 12-01-2024

## I. Introduction:

Childhood malnutrition is a crucial public health and development challenge in a developing subcontinent like India. Undernourished children have significantly higher risk of mortality and morbidity. The latest fact sheet of the state Maharashtra revealed that 26.4 % of the children under the age of five years are wasted while 9.5 % children of the population are severely wasted (NFHS - 4, 2016). To cure these children by providing them quality nutritional and health care is the prime concern of the state and so under the aegis of *Mission Balam Sukham* and National Health Mission, *Bal Seva Kendra* (Child Malnutrition Treatment Center - CMTC) and *Bal Sanjeevani Kendra* (Nutritional Rehabilitation Center - NRC) are established across the state (CoH, 2012). These centers focus on providing timely and quality care to the large number of severe malnourished children.

## II. Nutritional Rehabilitation Center (NRC) and Its Scope:

There are two approaches for management of children with severe malnutrition 1. Community Based Management and 2. Inpatient or Facility Based Management. In the first one the nutritional care is provided to the malnourished children at the Anganwadi Centres (AWCs). Majority of the malnourished children (85 – 90 %) from the society are to be provided care at such centers in community setting. In the latter case the SAM children with complications and requiring inpatient care are considered. The proportion of such children among the malnourished children is about 10 – 15 %. Such children are treated either at CMTCs or at NRCs. The CMTCs are the second level of SAM management which provides the institutional care for the inpatient treatment at Community Health Centres (CHCs). The NRCs which are functioning at the district hospitals and medical colleges are at the tertiary level of institutional care for the inpatient management and treatment of the SAM children with complications. If the SAM children with complications at CMTCs fail to respond the treatment provided to them, they are referred to the NRC of the district. This way the NRCs generally work with critical cases of malnourished children with some diseases of medical complications.

## III. A Case Study of Baby@:

Baby was one of the most successful cases of during the researcher's tenure as the Nutrition Assistant at NRC, Pune Maharashtra, India. The facts, treatment and results regarding SAM management and treatment of

Baby given in this section.

Baby at the Time of Admission at NRC:

Baby was the severe malnourish child referred to NRC (Civil Hospital Pune) from the pediatric ward of the civil hospital Pune. The girl was belonging to a BPL (Below Poverty Line) family of a nearby village of the district place Pune. When she was admitted to the NRC, her age was 3 years. The girl had the complications like bilateral pitting oedema (a condition characterized by an excess of watery fluid collecting in the cavities or tissues of the body), cough – cold, diarrhea and she was HIV positive. Some facts and figures related to that girl at the time of admission at NRC and proposed stats for declaring her cured were as below:

**Table 1. Stats at the Time of Admission and Proposed Stats at the Time of Discharge**

Parameter	Height(cm)	Weight(kg)	MUAC <sup>#</sup> (cm)	Z Score	Oedema	AppetiteTest	Diseases
Baby's Stats at the time of admission	77	6	10.5	< - 4 SD	++	Fail	Cough – Cold, Diarrhea, AIDS
Proposed Stats (To declare her cured)	NA	7	> 11.5	< - 3 SD	0	Pass	No Cough – Cold and Diarrhea

# Mid Upper Arm Circumference

Nutritional Treatment Provided to Baby at NRC:

Baby was treated for a period of 21 days as per the state guideline for treatment of the SAM children at NRCs along with the medicines prescribed by the pediatrician of the civil hospital. Her daily food intake and weight were measured daily throughout the treatment. During this

The real name, village, images of Baby and duration of her treatment at NRC are not specified for unrevealing her identity period her mother was provided all the basic facilities, counseling and compensation of Rs. 100 per day for her stay at the NRC.

**First Phase of the Treatment:** According to the guideline the F75 (A 100 ml volume of the Mixture of Milk, Water, Rice Puff Powder, Sugar and Oil in a specific proportion which provides 75 kcal energy, 1.2 g Protein and 1 g Lactose) was started on the first day of the admission. On the very first day she couldn't finish the F75 feeds given to her at regular intervals per her weight. She started finishing the therapeutic feeds (F75) from the second day. The feed consumption and leftover were measured and mentioned in her SAM card regularly for every feed.

**Transition Phase of the Treatment:** In this phase F100 Feed (A 100 ml volume of the Mixture of Milk, Water, Sugar and Oil in a specific proportion which provides 100 kcal energy,

1.9 g Protein and 3 g Lactose) were started and increased gradually. This treatment was provided for next two days as then taken to the next phase as she started demanding for more feeds.

**Second Phase of the Treatment:** In this phase along with 8 feeds [F 100 (4 feeds) + EPD(4 feeds)] started. The EPD (Energy Protein Dense) feed is a mixture of roasted peanuts, milk powder, sugar and coconut oil which was given in the proportion (20 g) as per her weight. During this phase of the treatment on her demand the salt less routine food items like Daal- Rice, Chapati – Sabji, Khichdi were started in between and after the therapeutic feeds of F 100 and EPD gradually.

**Mother Counseling:** Baby's mother was provided guidance and counseling on the topics like cleanliness and hygiene, vaccination, nutritional care of children, the factors of malnourishment, care of ill children, proper cooking methods (demonstration of low cost healthy recipes), supplementary feeding practices, children's sense and affective development by play-way methods. The importance of follow-up after the treatment at NRC and child care at home was emphasized to ensure the positive results even after discharge from the NRC.

Baby at the Time of Discharge and follow – ups:

The facts and figures at the time of discharge and follow-ups in comparison to the stats at the time of admission are given in the table below:

**Table 2. Stats at the Time of Admission, Discharge and Follow-Ups**

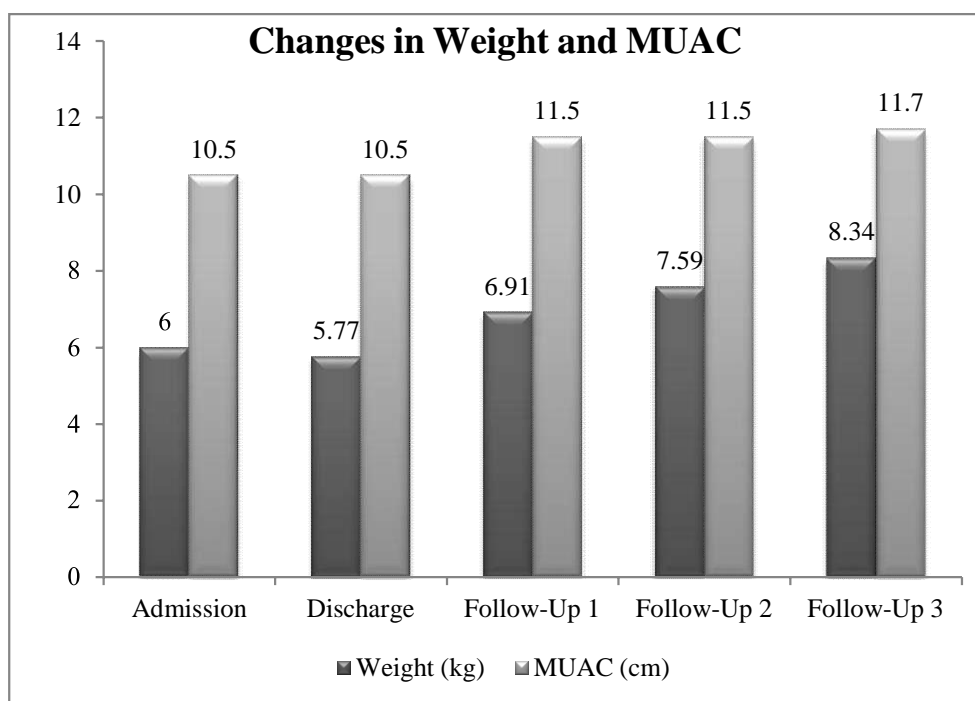
Parameters	Height(cm)	Weight(kg)	MUAC <sup>#</sup> (cm)	Z Score	Oedema	AppetiteTest	Diseases
Stats at the time of admission	77	6	10.5	< - 4 SD	++	Fail	Cough – Cold, Diarrhea, AIDS
Stats at the time of discharge	77	5.770 <sup>§</sup>	10.5	< - 4 SD	0	Pass	No Cough – Cold and Diarrhea
Stats at the time of 1 <sup>st</sup>	77	6.910	11.5	< - 3	0	NA	No Cough

Parameters	Height(cm)	Weight(kg)	MUAC# (cm)	Z Score	Oedema	AppetiteTest	Diseases
Follow-up (after 15 days of discharge)				SD			- Cold and Diarrhea
Stats at the time of 2 <sup>nd</sup> Follow-up (after 30 days of discharge)	77	7.590	11.5	< - 2 SD	0	NA	No Cough - Cold and Diarrhea
Stats at the time of 2 <sup>nd</sup> Follow-up (after 30 days of discharge)	77	8.340	11.7	< - 1 SD	0	NA	No Cough - Cold and Diarrhea

§ The weight at the time of discharge is reduced than that of the admission time and the Zscore also remained the same but the child was considered as cured and fit for a discharge because her earlier weight was due to the ++ Oedema stage.

The graphical presentation of the changes in weight and MUAC are given in the figure 1. The figure shows that there is a significant positive change in health parameters - weight and MUAC as a result of the nutritional treatment and mother counseling provided at the NRC.

**Figure1. Changes in Weight and MUAC at Different Event**



#### IV. Conclusion:

The nutritional treatment given at NRC is very scientific process of managing the SAM children. The NRCs have the scope of not only helping the hospitals in curing the undernourished children but to educate the mothers of such children too. The success of the case of Baby was a good example of the mother's awareness gained at the NRC. In fact, the good results achieved at the NRC can be continued by educating the mothers about health and nutritional care of the children. My experience (the success stories of Baby's case and that of some other children) at Nutrition Assistant helps me to acclaim that this kind of facility-based centres is like a boon to the society to cope up with the public health and development.

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