

Terms of reference for the study on Functioning of Nutritional Rehabilitation Centres (NRC) -A Comparative Analysis across the Regions in Karnataka

Sl no	Content	Page no
1	Title	2
2	Department implementing the scheme	2
3	Background and Context	2-4
4	Evaluation Scope, Purpose and Objective	4-5
5	Evaluation Questions	5-7
6	Sampling and Evaluation methodology	8-10
7	Deliverables and time schedules	10
8	Qualities Expected from the report	10-11
9	Cost Limits and schedule of budget release	11
10	Administrative arrangements for the study	12
11	Contact person to get further details about the study	12
12	References	13
13	Annexure-1	14

Terms of Reference for the Study on Functioning of Nutritional Rehabilitation Centres (NRC) -A Comparative Analysis across the Regions in Karnataka

Title of the study:

Functioning of Nutritional Rehabilitation Centres (NRC) -A Comparative Study across the Regions in Karnataka”

2. Department implementing the scheme:

Department of Health and Family Welfare

3 Background and Context

Child and maternal under nutrition is responsible for approximately 3.5 million deaths globally and 35% of the disease burden in children below the age of five years.(Black R E 2008). The prevalence of severe acute malnutrition (SAM) is estimated to be around 1-2% in developing and least developed countries (UNICEF 2005). Stunting rates are declining but 159 million children around the world are still affected.

Maternal and child under-nutrition account for 11% of the global burden of the disease. Global nutrition challenges are multifaceted. Poor access or availability to food of adequate nutritional quality or the exposures to conditions that impair absorption and use of nutrients has to led to large sections of the world’s population being undernourished, having poor vitamin and mineral status or being overweight and obese, with large differences among population groups. The conditions are often present simultaneously and are interconnected . The prevalence of severe acute malnutrition (SAM) is estimated to be around 1-2% in developing and least developed countries. Stunting rates are dropping but 159 million children around the world are still affected (UNICEF 2009)

In India, despite recent high economic growth and policy interventions through ICDS and maternal health care, the prevalence of malnutrition in children below three years of age is one of the highest in the world. In 2005-06, approximately one fourth of newborns had low birth weight, 45%of children under three were stunted and 40%were underweight.

India has one of the highest incidences of childhood malnutrition in the world. It is estimated that more than one third of the world's stunted children live in India. (Global Nutrition Report 2016 p-2) Around 45 per cent of the India's children under the age of 3 are stunted, 23percent are wasted and 40 per cent are underweight (IIPS 2007 5). The proportion of underweight and stunted children rises to nearly half of the child population (43 per cent and 48 per cent respectively) if those under the age of 5 are considered (UNHICEF 2009) This means India is home to 31 per cent of the world's children under-5 that have stunting.

Karnataka is ranked 6th among the states of India in terms of GDP and one of the developed states of south India but the health and nutrition status of the population is not so impressive. 36.2% of children under-five are stunted and 10.5% are severely wasted and 35.2 percent of the children are underweight (NFHS -4 2015-16) Anaemia among children under-five is way too high at 60.9% and 44.8% of the women are anaemic (NFHS-4 2015-16). SAM increases the mortality, morbidity (including common childhood illnesses of diarrhea, acute respiratory infections and malaria) and impairs the physical and mental capabilities among children. In 2012, the Karnataka Department of Health and Family welfare (DHFV) reported that 64,688 children aged under 6 years in the state as suffering from SAM in the health camp conducted in october 2012 Further 1.2 million children in the State were malnourished and underweight as per the Govt. Report submitted to the High court in January 2012.

What is Malnutrition

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 also encompasses over nutrition, resulting from excessive intake of specific nutrients. 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.

Three commonly used anthropometric indices to measure nutritional status are:

- Weight-For-Age (known as underweight)
- Length-For-Age or Height-For-Age (known as Wasting)
- Weight-For-Length or Weight-For-Height (known as stunting)

Underweight, based on weight for-age, is a composite measure of stunting and wasting and is recommended as the indicator to assess changes in the magnitude of malnutrition over time. This condition can result from either chronic or acute malnutrition, or both. Stunting is an

indicator of linear growth retardation that results from failure to receive adequate nutrition over a long period or recurrent infections. It may be exacerbated by recurrent and chronic illness. It is an indicator of past growth failure. It is associated with a number of long-term factors including chronic insufficient nutrient intake, frequent infection, sustained inappropriate feeding practices and poverty. Wasting represents a recent failure to receive adequate nutrition and may be affected by recent episodes of diarrhoea and other acute illnesses. Wasting indicates current or acute malnutrition resulting from failure to gain weight or actual weight loss. (Operational Guidelines for the facility Based Management of SAM MoHFW 2011).

Government Interventions

The Integrated child Development service (ICDS) is operating in the State since 1975. The supplementary nutrition programme takes care of the nutrition requirements of the children and the pregnant women at Anganwadi Centres. Further, the Government of Karnataka launched a Comprehensive Nutrition Mission in 2010 to fight with malnutrition in the State. Under National Health Mission the Nutrition Rehabilitation centres are established to address the challenges of malnutrition in the State.

Nutrition Rehabilitation Centers:

To address the challenges of malnutrition and treat Severe Acute Malnutrition (SAM) among children, the Indian Government has set up Nutritional Rehabilitation Centers (NRC) under the Bal Shakti Yojana and Atal Bal Mission (ABM). There are 896 NRCs functional in 25 states/Union Territories under the National Health Mission. NRC is a special unit located in a health facility and dedicated to the initial management and nutrition rehabilitation of children with SAM. In general, they are preferably located a district hospitals/Medical college Hospitals and have 10-20 beds.

The main functions of NRCs are

1. To provide clinical management for severe acute malnutrition.
2. To promote physical and psychosocial growth of severe acute malnutrition children.
3. To build capacity of mothers and care givers in appropriate feeding and care practices.
4. To identify social factors that contributed to SAM.

5. Demonstration and practice by doing on the preparation of energy dense child foods using locally available, culturally acceptable and affordable food items.
6. Follow-up of children discharged from the facility.

To prevent deaths among severe malnourished children identified under five years of age, the Government further started the Nutrition rehabilitation centres (NRCs). The objectives of the programme are to control malnutrition among the children aged 1-5 years in the state and to bring down the percent of severe malnourished children to less than 1%. There are 32 NRCs (3 in Bangalore Urban and one each in all districts except Bangalore Rural) and 27 Modified NRC (MNRC) at first Referral Unit/Taluka level hospitals. MNRCs are equipped with 5-10 beds. NRCs have a trained Medical Officer, Staff Nurses and diet Counsellor and MNRCs are staffed additionally with cook, attendant and social worker. SAM children admitted in these centres are provided medical and nutritional therapeutic care as per SAM management guidelines of World Health Organization (WHO 2003 & updated 2016) and Indian Academy of Paediatrics.

Modified Nutrition Rehabilitation Centres (MNRC): At Taluka level the facility based care unit are referred to as Modified Nutrition Rehabilitation Centre with 5 beds. There are 27 MNRC located at identified Taluka Level Hospitals. These are referred rehabilitation centres with trained medical officers and staff nurses where SAM children are referred from primary health centres. Children and mother/care taker will stay for a maximum of 14 days. In addition to providing nutritious food to children, awareness is being created to mothers /care takers on preparation of nutritious food. An amount of Rs.174/- to compensate the loss of wages as per the guidelines of NRC and Rs.125/- for food and Rs. 125/- for drugs is being provided.

At the NRC, nutritional and medical intervention (appropriate antibiotics, deworming tablets, iron supplementation and micronutrients) is provided to the children. The children are admitted and nutritionally rehabilitated for a minimum period of 14 days. F-75, F-100 and lactose-free diet are prepared using locally available foodstuffs. Anthropometric indicators weight, height and mid-upper arm circumference (MUAC) are monitored to observe the effect of interventional measures on the health status of the admitted children.

The children are discharged after a minimum period of 14 days, provided the child does not show any obvious signs of infection or oedema, and has received the stipulated amount of micronutrients, is gaining at least 8-10 g/kg/day and the mother has gained knowledge of correct feeding practices. The children are again brought to the centre by the AWWs on the designated follow-up dates at 7 days, 15 days, 1 month, 3 months, and 6 months following

discharge from the NRCs wherein the AWWs are paid an incentive of Rs. 100 for bringing the child for each follow-up visit. The mother also receives a sum of Rs. 75 to compensate for her daily wage loss. The same anthropometric measurements are taken on the follow-up visit and the child is treated for medical conditions and is readmitted if required.

NRCs in Karnataka

In the year 2014-15 Karnataka had 50 functional NRCs and 4137 children were admitted as on December 2014.

Table -1 Progress of NRCs in Karnataka

Year	Admissions	Discharged with target weight gain	Referred (Medical transfer)	Children followed up
2015-16	4664	2883	274	2821
2016-17	3870	3153	215	2833

Source: Annual Reports DH&FW.

4 Evaluation Scope Purpose and Objectives

The scope of the study includes the 32 NRCs in Bangalore urban and all the districts across the four divisions in the State that are functioning since 2012 and 27 MNRCs in the State. The functioning and impact of these centres across the divisions and districts needs to be examined with respect to the objectives of the Scheme. The inputs being administered in the NRCs have to be adequately analyzed to evaluate whether the desired objectives are being fulfilled. Thus the purpose of the present study is to analyze the effect of the NRCs in improving the health and nutritional status of severe malnourished children admitted to the centres and the effect of health education measures undertaken at the centres on the change in the nutritional knowledge and behaviour of the households. The follow up of the children by the centres will also be analysed to examine the extent to which the programme objectives in terms of sustainability are attained.

Evaluation Objectives

1. To review the National and State policy on Nutrition.
2. To examine the trends in the magnitude and dimensions of malnutrition in the State over the time period across the geographical space in the State.
3. To review the studies undertaken in the past and record the major conclusions of the studies.
4. To assess the need and context for the establishment of the Nutritional Rehabilitation Centres in the State.
5. Evaluate the effect of nutritional interventional measures undertaken at NRCs in improving the nutritional status of admitted children through review of select anthropometric indicators.
6. To examine the impact of these Centres on the SAM children and on the nutritional behaviour of the households.
7. To examine the relation between the patients' demographic characteristics, completion of follow-up visits and sustained weight gain.
8. To examine the follow up process, the problems involved in getting and retaining the child at NRC and offer suggestions based on the analysis in the study.
9. To identify and highlight the best practices of NRCs management in the State across the various regions of the State of Karnataka.
10. To carry out a comparative analysis of management practices, behaviour change in feeding practices at family level, community & inter –Sectoral linkages, impact and effectiveness of the programmes across various regions of Karnataka.

5 Evaluation questions (Inclusive but not Exhaustive)

1. What are the trends in malnutrition in Karnataka State over the years? Why the incidence of malnutrition is high in North Karnataka region?
2. What are the causes of malnutrition? What are the socio-demographic determinants of malnutrition?
3. What are the reflections and conclusions of the studies on malnutrition at International, National and State level? (Review of literature of major studies and reports).

4. Facility performance and utilization to be carried out in all NRCs/MNRCs in Karnataka on the basis of Secondary data from State Health & Family Welfare Department,

5. About the Centres in the sample

Whether the NRCs have the required facilities as per the guidelines and to what extent they are child friendly with regard to

- Patient area
- Play and counselling area
- Nursing Station
- Kitchen and food storage
- Attached toilet and bathroom facility.

Human resources

- Medical Officer
- Nursing Staff
- Cook cum Care taker
- Attendant/Cleaners
- Medical Social Worker

(Use the NQA Checklist for NRCS)

6. Examine the age specific admissions in the NRCs. Whether the impact of NRC interventions was uniform or varies across the age group?
7. Evaluate the performance of the sample centres in terms of
 - Recovery rate
 - Death rate
 - Rate of referral to higher facility
 - Case fatality rate
 - Weight gain
 - Feeding Practices
 - Bed Occupancy Rate
 - Average Length of Stay
8. Skilled capacity building of staff in all aspects of functioning and management of NRCs is an essential criterion for effective discharge of their roles and responsibilities. Whether

9. What is the ratio of male and female children in the total children admitted in the centres across the regions? Examine the gender dimensions of malnutrition among the female children.
10. What is the level of awareness about nutrition diet for children in BPL households? Whether any awareness programmes are conducted at the village level to promote it?
11. Children discharged from NRC should be followed up at the community level to ensure appropriate feeding, follow up at the NRC for scheduled visits and to identify children who are not responding to treatment for referral to the facility level. What is the level of participation of Community workers, ASHA and Anganwadi workers in identifying and admitting the children to NRCs and in the follow up process?
12. Some studies from different states regarding effectiveness of NRC have shown a definite impact in reducing case fatality rates, but defaulter rates in follow-ups have been high which renders the overall goals of sustaining gains for child health and nutrition elusive. In view of this, what is the dropout rate at different follow up visits? Whether it varies across the Centres, regions and caste groups? What are the reasons for the dropouts?
13. What is the nature of training given to the mothers at the NRC? Whether any hands on training is given to them in the preparation of therapeutic foods? What is the knowledge gain in basic concepts of nutrition of the mothers at the time of exit from NRC?
14. What are the difficulties faced by the mothers to stay at the NRC? Whether the financial assistance given at the centre is adequate enough to compensate the loss in daily earnings of these poor women?
15. Whether any best practices are developed at micro level in meeting the challenges of malnutrition? Present cases of success stories in the field.
16. Though the magnitude of malnutrition is high in the State, the utilisation of budget is less than 50 percent in all the years since 2013-14 as compared to the allocation as well as the release of funds. What are the reasons for low utilisation of the budget?
17. In view of higher magnitude of malnutrition in few districts in the State, what is the feasibility of developing Community-based rehabilitation or community-based management model (It refers to the treatment that is implemented at home with some external input).

6 Evaluation Methodology

The evaluation design will include quantitative and qualitative methodology to arrive at objective and accurate results.

Quantitative Methods:

The quantitative methods for the evaluation of NRCs broadly include secondary data from records and MIS data at NRCs; Medical Record analysis of SAM Children treated at NRCs, Service Record Analysis, Desk Reviews and House Hold Survey of beneficiaries (SAM Children)

Inputs- Infrastructure & service Delivery for SAM Treatment:

Funding, Staff, Facility, Drugs & Consumables, Equipment and Machines.

Process of Care Delivery: System Analysis

Diagnosis, InPatient care , Treatment, Follow-up, Resource Mobilization and Management (Financial, HR, Materials etc), Facility/Asset maintenance, Training, Counselling, Records & Documentation (Medical Records & Administrative), Quality Management

Output Indicators:

Number of SAM Children Treated, recovery, Facility Utilization, Availability & Accessibility of Services in remote areas, Benefits to Community, Accountability (Records/HIS Maintenance, Quality, Reporting).

Various monitoring indicators of children's growth & Development, Treatment Protocols followed, Facility Utilization & Effectiveness, Adoption of dietary habits, Hygiene & sanitation practices among the community (family) HR indicators (quantitative , training and skill related)

Interview of NRC Staff and Interactions with referrals, Anganwadi Workers, PHCs linked, Key Informant Interviews of Community and Stakeholders.

Facility performance and utilization will be carried out in all NRCs/MNRCs in Karnataka on the basis of Secondary data from State Health & Family Welfare Department,

Sampling Design:

A Multistage stratified random sampling method will be applied to select the final sample.

I stage- The State is divided into four strata on the basis of administrative divisions

The NRCs/MNRCs will be listed from all districts of Karnataka, and regional distribution will be mapped for four regions of Karnataka.

II Stage -The districts with high incidence on malnutrition within the division will be chosen as sample districts based on the data by DH&FW and in the Karnataka Report on MDG Goals.

Table -2 Districts with high Incidence of Malnutrition across the Divisions

	Name of the Division	Name of the District	% of severely underweight
1	Bangalore Division	Chitradurga	1.49
		Bangalore (U)	1.48
2	Mysore Division	Kodagu	1.04
		Chikmagalur	0.89
3	Belgaum Division	Dharwad	2.44
		Gadag	2.32
4	Kalaburagi Division	Koppal	2.72
		Raichur	2.13

Source: MDG Goals

III Stage -Sample of Children and mothers

Table -3 Districts, Centres and No. Of children underweight

	Name of the District	No. of centres	Admissions 2015-16	% of severely underweight 2016-17	total
1	Chitradurga	02	173	184	357
	Bangalore (U)		589	434	1023
2	Kodagu	02	68	86	154
	Chikmagalur	02	98	124	222

3	Dharwad	03	333	351	684
	Gadag	02	156	228	384
4	Koppal	02	178	144	322
	Raichur	02	228	222	450
	Total		1823	1773	3596

Sample Size @ 95% confidence level & margin of error =4 is 515

(14.3%) Proportionately distributed across the districts and years.

7. Deliverables and time Schedule:

The whole study is to be completed in 6 months from date of signing the MOU with KEA. The evaluating agency is expected to adhere to the following timelines and deliverables.

1	Work plan /Inception Report submission	Within One month of signing the agreement.
2	Field Data Collection	Two-three months from date of work plan approval
3	Draft report Submission	Within one month after field data collection
4	Final Report Submission	Within One month from draft report submission
5	Total duration	6 months

8 Qualities Expected from the Evaluation Report :

The following are the points, only inclusive and not exhaustive, which need to be mandatorily followed in the preparation of evaluation report:-

- a) By the very look of the evaluation report it should be evident that the study is that of Health Department of the Government of Karnataka, and Karnataka Evaluation Authority (KEA) which has been done by the Consultant. It should not intend to convey that the study was the initiative and work of the Consultant, merely financed by the Karnataka Evaluation Authority (KEA).
- b) Evaluation is a serious professional task and its presentation should exhibit it accordingly. Please refrain from using glossy, super smooth paper for the entire volume overloaded with photographs, graphics and data in multicolor fancy fonts and styles.
- c) The Terms of Reference (ToR) of the study should form the first Appendix or Addenda of the report.
- d) The results should first correspond to the ToR. In the results chapter, each question of the ToR should be answered, and if possible, put up in a match the pair's kind of table, or equivalent. It is only after all questions framed in the ToR that is answered, that results over and above these be detailed.
- e) In the matter of recommendations, the number of recommendations is no measure of the quality of evaluation. Evaluation has to be done with a purpose to be practicable to implement the recommendations. The practicable recommendations should not be lost in the population maze of general recommendations. It is desirable to make recommendations in the report as follows:-

(A) Short Term practicable recommendations

These may not be more than five in number. These should be such that it can be acted upon without major policy changes and expenditure, and within say a year or so.

(B) Long Term practicable recommendations

There may not be more than ten in number. These should be such that can be implemented in the next four to five financial years, or with sizeable expenditure, or both but does not involve policy changes.

(C) Recommendations requiring change in policy

These are those which will need long period of time, resources and procedure to implement.

9. Cost and schedule of Budget releases:

Output based budget release will be as follows-

- The **First instalment** of Consultation fee amounting to 30% of the total fee shall be payable **as advance** to the Consultant after the approval of the inception report, but only on execution of a bank guarantee of a scheduled nationalized bank valid for a period of at least 12 months from the date of issuance of advance.
- The **Second instalment** of Consultation fee amounting to 50% of the total fee shall be payable to the Consultant after the approval of the Draft report.
- The **Third and final installment** of Consultation fee amounting to 20% of the total fee shall be payable to the Consultant after the receipt of the hard and soft copies of the final report in such format and number as prescribed in the agreement, along with all original documents containing primary and secondary data, processed data outputs, study report and soft copies of all literature used to the final report.

Tax will be deducted from each payment as per rates in force. In addition, the evaluator is expected to pay statutory taxes at their end.

10. Minimum Qualification of the consultant:

Consultants should have and provide details of evaluation team members having technical qualifications/capability as below-


Sl. No	Subject Experts Requirements	Educational Qualification	Experience in the relevant field
1.	Principal Investigator	A paediatrician/ MBBS with specialisation in Community Medicine	10 and more years
2.	1 st Core Team Member	A post Graduate in Social Work/ with diploma in public Health Management / (Preferable)	5-10 years
3.	2 nd Core Team Member	Data analyst -Post graduate in Statistics /Sociology/Rural Development with adequate	5 years

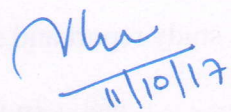
		knowledge of computer softwares and data analysis	
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And in such numbers that the evaluation is completed within the scheduled time prescribed by the ToR. Consultants not having these number and kind of personnel will not be considered as competent for evaluation.


11. Contact persons: Dr. Sadhana

The entire process of evaluation shall be subject to and conform to the letter and spirit of the contents of the government of Karnataka order no. PD/8/EVN(2)/2011 dated 11th July 2011 and orders made there under.


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11/10/17
Chief Evaluation Officer
Karnataka Evaluation Authority

(Nodal Officer)


CD Chaya K Deganbar

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ToR is Approved by P.S.Planning on 29-07-2017