



Impact of Supervised Nutrition Supplementation and Nutrition Education through Child Development Centers (CDC's) for Improving Preschool Undernutrition in Primary Health Care Setting of Yavatmal District, Maharashtra, Central India

Authors

Nitin N Ambadekar¹, Vivekanand C Giri², K.Z. Rathod³, Sanjay P Zodpey⁴,
Sunita P. Bharati⁵

¹MD, Additional District Health Officer, Dept of Public Health, Z.P, Yavatmal, Maharashtra, India

²MD, Assistant Director, Central Leprosy Teaching Research Inst., MOHFW, GOI, Chengalpattu (TN) India

³DPH, District Health Officer, Dept of Public Health, Z.P, Wardha, Maharashtra, India

⁴M.D, Ph D, Director Public Health Education, & IIPH Delhi, Public Health Foundation of India, New Delhi, India

⁵M.D, Assistant Professor, Dept of Anatomy, Shri Satya Sai Medical College & Research Institute, Ammapetai, Chennai

Dept of Public Health, Govt. of Maharashtra, Yavatmal

Corresponding Author

Dr. Vivekanand C. Giri

Central Leprosy Teaching and Research Institute, Chengalpattu 603001, T.N. India

Email: drvivekgiri@gmail.com

Abstract

Introduction: Under-nutrition remained one of the most common causes of morbidity and mortality among children throughout the world. 1.84 to 2.4 million of deaths occurred in India. Principle of CDC was to provide supervised nutritious food to severely (G-III & G-IV) undernourished preschool children and imparting nutrition education to mother/guardian of children. The present study aims to study the impact of 'Child Development Centers' in improving grade of severe undernourished preschool children(G-III/IV) in primary health care setting

Materials and Methods: Present interventional study was carried out in primary health care setting in Yavatmal District. The intervention was in the form of organization of Child Development Centre's (CDC's) at Primary Health Centers (PHC) in which severe undernourished G-III and G-IV children were hospitalized for 21 days. There were three main interventions planned and implemented in CDC's. First was supervised dietary supplementation. This includes providing approximately eight feeds daily. Second was growth monitoring and medical management. Third intervention is in the form of nutrition education to parents along with participation of mother in preparation of various new food supplementation and maintaining community growth charts.

Results: Severe undernourished children 547 children were admitted to CDC's established at PHC's in Yavatmal. At the time of discharged from CDC 274 (50.1%) children had improvement in their grade of undernutrition. There was reduction of Grade III under nutrition from 75.4% to 47.3% and Grade IV from 11.5% to 3.8% after 21 days of intervention at CDC. At the time of discharge from CDC highest average daily weight gain was seen in children aged 7 to 12 months (5.28 gm per day per kg) and in G-IV children (6.14 gm per day per kg).

Introduction

Undernutrition remained one of the most common causes of morbidity and mortality among children throughout the world ⁽¹⁾. Almost 10 million children below the age of five years die every year from causes such as pneumonia, diarrhea and malaria. 1.84 to 2.4 million of these deaths occurred in India and carries the main burden of child deaths globally ^(2,3). Undernutrition is an underlying cause in about one-third of deaths among less than five years of age ^(4,5,6). Thus inadequate intake, infection and poor nutritional status are intimately linked and maintaining a good nutritional status was an integral part of improving child survival. Interventions to prevent under nutrition in all its forms should therefore receive the highest priority.

Indian government and public health departments in India and particularly in Maharashtra were intensively working towards reduction of undernutrition. One of the significant government initiatives in this regard was introduction of Integrated Child Development Scheme (ICDS) and setting up of anganwadies in villages throughout the country. Public health Department in collaboration with ICDS was implementing childhood nutrition programs and providing health services. After the launch of National Rural Health Mission (NRHM) and with its emphasis on reducing infant mortality (IMR) and childhood mortality (CMR), reducing undernutrition became highest priority for health department.

Keeping in view of the urgency and sensitive nature of problem Government of Maharashtra had established Rajmata Jijau Mother-Child Health and Nutrition Mission in year 2006. Most significant objective of the mission was to reduce the Grade III(G-III) and Grade IV(G-IV) under nutrition. As part of mission objective new initiative in form of Child Development Centers(CDC's) were introduced to treat Grade III & IV under nutrition ⁽⁷⁻⁹⁾. Principle of CDC was to provide supervised nutritious food to severely (G-III & G-IV) undernourished preschool children and imparting nutrition education to mother/guardian of children so that the learnt

knowledge and practices will be implemented when child was discharged from the PHC's. Encouraged with the initial results in pilot phase, the CDC's were implemented in step wise manner in districts after providing training to district officials, medical officers and ICDS functionaries. The present study aims to study the impact of 'Child Development Centers' in improving grade of severe undernourished preschool children(G-III/IV) in primary health care setting. The study also aims to study the impact of community based follow up and impact of nutrition education in further improving grades of undernutrition up to six months following discharge from CDC's.

Materials and Methods:

Present interventional study was carried out in primary health care setting in Yavatmal District. The district is located in hilly area and there is predominance of tribal population namely Gond, Kolam, Banjara etc. This study was planned to study the impact of intervention which was implemented by Government of Maharashtra as per the guidelines of Rajmata Jijau Mother- Child Health and Nutrition Mission ⁽⁷⁻⁹⁾. The intervention was in the form of organization of Child Development Centre's (CDC's) at Primary Health Centers (PHC) in which severe undernourished G-III and G-IV children were hospitalized for 21 days. CDC's were established simultaneously in all PHC's of the district Yavatmal from 19.4.08 up to 10.5.08. Grade of undernutrition was decided based on weight for age criteria as per IAP classification as this was then followed by ICDS and Public Health Department for growth monitoring of under 6 year children. Components of CDC's were supervised diet to children, medical care of ill children, regular growth monitoring during the stay at the CDCs as well as after being discharged. The community based monitoring of weight was done by anganwadi workers. The medical and nutrition protocol was followed as specified by Rajmata Jijau Mother- Child Health and Nutrition Mission. The dietary supplementation was given by anganwadi workers under the guidance of trained

ANM's and anganwadi supervisors. ANMs were supervising the preparation of dietary supplementation by Anganadi workers and also suppose to teach guardians of admitted children how to prepare the daily nutritious food for children and administering the medications to children. There were at least 8 feeds daily for the children (Annexure 1 and 2). Medical protocol was determined for individual children by medical officer and followed up under the supervision of PHC medical officer. Opinion of pediatrician was taken whenever required.

A written permission was obtained from District official before embankment of this study. The study intervention was implemented through health machinery.

All G-III & G-IV children were identified by anganwadi workers through district wide survey in rural area of Yavatmal district. Anganwadi workers weighed the preschool children enrolled with them in particular village. The weighing was taken at anganwadi centers using "Salter spring balance scale" and age was taken from birth record available with Anganwadi centers and with ANM of that area. Grade was calculated using weight for age criteria since this was the criteria used to grade severe undernutrition cases at the ICDS centre's,. Gradation of nutrition was calculated by anganwadi workers from the ready reference or growth charts available with them. In the survey out of 234273 under 6 children 2,32,602 (99%) under 6 years age children were weighed. Survey reported 548 (0.23%) G-III & G-IV children and was persuaded to admission in CDC at PHC's except one between age group of 0 to 6 month who was referred to higher centre for management. The exclusion criteria includes critically ill child, parents not willing for admission and 0 to 6 month children. At the time of admission parents of the children were informed of the course of treatment and care at CDCs and verbal consent for admission was taken. At the time of admission to CDC children were examined again and anthropometric measurement was taken by Medical Officers. These resulted in re-classification of 72 children

in to G-II but as these were of borderline category and for ethical issues these children were continued in to CDC's. All efforts were taken and losses of wages were paid to parents so that parents along with children could stay at CDC for 21 days. Out of 548 children identified 547 study subjects were admitted and out of these, 513(93.8%) remained admitted for 21 days in CDC. All children who were admitted at CDCs were followed up in community by anganwadi workers and 6 months follow up data was available for 530(96.9%). All the children i.e. all 547 identified were followed up in the community for assessing the outcome of the intervention. Weight was taken at the time of admission, at the time of discharge and every month their after for assessing the follow up weight gain.

Before initiation of CDC's training of all concerned medical officer's (MO's) and child development project officer's (CDPO's) was conducted for uniform operation of guideline. The trained MO's conducted training at primary health centre (PHC) level for MPW, ANM, other PHC staff and CDPO's organized training for mukhya sevika, anganwadi worker and anganwadi helper. District level supervisory teams were formed for uniform implementation of intervention at all CDC's.

The purpose of CDC and intervention plan of action to be followed at the CDCs were explained to local panchayat raj institution leaders, community leaders and parents of children eligible for admission in CDC. Children along with their mothers or parents were kept at the CDCs for 21 days duration. Anthropometric measurement was recorded on first day of admission to CDC at PHC. This was considered as baseline weight for measuring further changes in weight. Weight was taken with the use of electronic weighing machine at Primary Health Centre.

There were three main interventions planned and implemented in CDC's. First was supervised dietary supplementation. This includes providing approximately eight feeds daily to admitted children prepared in kitchen established at Primary Health Centre (PHC). Anganwadi

workers prepared food under the supervision of health worker female of PHC and anganwadi supervisors who were trained. Protocol for preparing food and schedule was as per Rajmata Jijau Mother-Child Health and Nutrition Mission and is given in annexure 1 and 2(7). Children were fed 6 to 8 times daily as per the schedule under direct supervision of health worker female and anganwadi workers. Second was growth monitoring and medical management which included electronic weighing of child daily, treatment of minor illness, correcting vitamin deficiency, management of hypoglycemia, hypothermia, dehydration, infection, and electrolyte deficiency. Each child was weighed daily and weight was marked on community growth chart so that mother knew importance of growth monitoring and also understood feeding with care which can make a difference in weight gain. Third intervention is in the form of nutrition education to parents along with participation of mother in preparation of various new food supplementation and maintaining community growth charts. Study subjects were discharged from CDC's after 21 days. After discharge these children were followed up monthly by anganwadi workers along with anthropometric measurement. Efforts were made to ensure that all children admitted to CDC to remain present along with their parents. Final follow up weight was not available for 17(3.2%) children but in analysis all the children were included considering their last known weight measurement.

Statistical analysis was done using Epi Info version 3.5.1.

Results

There were total 548 grade III & IV undernourished children identified through survey conducted by anganwadi workers prior to start of child development centers (CDC). Out of 548 severe undernourished children 547 children were admitted to CDC's established at PHC's in Yavatmal. CDC's were started on 19.4.2008 and continued for 21 days up to 10.5.2008 at PHCs. After re-examination and weighing by medical

officer undernutrition was re-classified into G-II 72(13.2%), G-III 412(75.3%) and G-IV 63 (11.5%). Though children were re-classified in PHC's ,all including Grade II were admitted to CDC to avoid ethical issues. Majority of these children were in the age group 13 to 36 months i.e. 338 (61.8%) and were female children (71.7%). Among the admitted children schedule cast (SC) and schedule tribe (ST) were in majority i.e. SC -28.1%, ST-30.8% (Table 1).

At the time of discharged from CDC 274 (50.1%) children had improvement in their grade of undernutrition. The improvement was considered when children in G-IV category at baseline moved to G-III/II/I and G-III children to G-II/I. The maximum improvement was seen in the age group of 13-36 months 177 (64.6%). There was reduction of Grade III under nutrition from 75.4% to 47.3% and Grade IV from 11.5% to 3.8% after 21 days of intervention at CDC. The observed reduction in grade of undernutrition was found to be statistically significant. Further at the end of 6 months follow-up, in the community overall 361 (68.6%) children had improvement in grades of undernutrition (Table 2).

Among the children having different grades of undernutrition at baseline significant improvement in grades was observed in G-IV, G-III undernourished children ($p < 0.001$), while no improvement was observed in G-II undernourished children at the end of CDC (Table 3).

Also comparison was done between grades at the time of discharge from CDC and grades at the end of 6 months follow up in community. In this significant ($p < 0.001$) improvement was observed for children in G-III & G-II but not for grade -IV (Table 3).

At the time of discharge from CDC highest average daily weight gain was seen in children aged 7 to 12 months (5.28 gm per day per kg) and in G-IV children (6.14 gm per day per kg).

In follow up period highest daily weight gain was observed in same age group (1.47 gm per day per kg) and in G-IV children (0.78 gm/day/ kg).

There were no deaths among undernourished children admitted in CDC.

Table 1: Distribution of study subject according variables

Variable		Number (percentage)
Age (In Months)	7-12	19 (3.5%)
	13-36	338 (61.8%)
	37-72	190(34.7 %)
Sex	Male	155(28.3%)
	Female	392 (71.7%)
Cast	SC	154(28.2%)
	ST	168(30.7%)
	Other	225(41.1%)
Grade of malnutrition	II	72 (13.2%)
	III	412(75.3%)
	IV	63(11.5%)

Table 2: Improvement in grades of undernutrition*

Age group (Months)	Deterioration grade	in	No Improvement	Improvement	Total
07-12	0(0%)		8(3.0%)	11(4.0%)	19(3.5%)
13-36	5(55.6%)		156(59.1%)	177(64.6%)	338(61.8%)
37 -72	4(44.4%)		100(37.9%)	86(31.4%)	190(34.7%)
Total	9(1.6%)		264(48.3%)	274(50.1%)	547(100%)

- *All children admitted in CDC were considered for analysis.

Table 3: Improvement in GIV & GIII under nutrition during admission and after follow up

Grade	G-IV(n=63)		G-III(n=412)		G-II(n=72)	
	At the time of discharge*	At the end of follow up***	At the time of discharge*	At the end of follow up**	At the time of discharge***	At the end of follow up**
0	0	0	0	3(0.7%)	0	0
GI	0	0	3(0.7%)	13(3.2%)	1(1.4%)	23(31.9%)
GII	4(6.3%)	12(19.0%)	180(43.7%)	272(66.0%)	71(98.6%)	49(68.1%)
GIII	46(73.0%)	39(61.9%)	221(53.6%)	122(29.6%)	0	0
GIV	13(20.6%)	12(19.0%)	8(1.9%)	2(0.5%)	0	0

- *Statistically significant reduction in grades of undernutrition from baseline($p<0.001$)
- **Statistically significant reduction in grades of undernutrition in follow up period($p<0.001$)
- *** No significant improvement

Table 4: Average weight gain according to age of children

Age in months	Average weight gain in gram per kg per day during admission	SD	Average weight gain in gram per kg per day during follow up	SD
7-12*	5.28#	5.9	1.47	0.99
13-36*	3.76	2.91	0.73	0.6
37-72*	3.37	3.25	0.43	0.36
Total	3.68	3.2	0.65	0.59

- Difference in weight gain was statistically highly significant in admission period than follow up period($P<0.001$, t -test)
- # Weight gain was statistically significant in 7 to 12 month age group than other age group.

Table 5: Average weight gain according to grades of under nutrition

Grade of under nutrition	Average weight gain in gram per kg per day during admission	SD	Average weight gain in gram per kg per day during follow up period	SD
GI*			0.41	0.7
GII**	2.8	2.76	0.57	0.43
GIII**	3.46	2.66	0.69	0.62
GIV**	6.14#	5.23	0.78	0.57
Total	3.68	3.2	0.65	0.59

* No child was in GI at the time of admission

** Difference was statistically highly significant at $P < 0.001$ (t-test)

Weight gain was statistically significant in G-IV than in other grades at $p < 0.001$, t-test

Discussion

Under-nutrition is associated with at least 33% of child deaths. It is also a major disabler preventing children who survives from reaching their full developmental potential. Around 32% of children less than 5 years of age in developing countries are stunted and 10% are wasted⁽³⁾.

Early nutritional deficits are also linked to long-term impairment in growth and health. Malnutrition during the first 2 years of life causes stunting, leading to the adult being several centimeters shorter than his or her potential height⁽¹⁰⁾. So as to address the problem of childhood undernutrition CDC model was proposed by Rajmata Jijau Mother-Child Health and Nutrition Mission and was implemented in all PHCs of district Yavatmal. It was observed that higher proportion of undernourished children was observed in 1 to 3 years age group, among female sex and in SC/ST population. This was in congruence with the other surveys conducted^(11, 12). Present observations suggest that the supervised nutrition supplement to severely undernourished children in primary health centre setup improves the grade of malnutrition which was also observed in other studies^(1,13). But

despite of significant improvement in grades of undernutrition very few children were improved to G-I(6.5%) and normal grade(0.5%) even at the end of 6 months follow up. This may be due to fact that gains in admission period were not continued during follow up period. This lower gain in weight during follow up period has resulted in very few children attaining the normal nutrition status i.e. G-0/G-I. Gain in weight seems to be comparable to some other studies^(1, 14, 15). In the present study it is observed that 49% children could not gain weight sufficient to fall into higher grades and referred to pediatric care in medical college for further evaluation. This could be explained to some extent by the fact that 34(6.2%) children did not complete full 21 day of CDC although included in analysis and 46 (8.4%) children became ill during admission with diarrhea, respiratory illness, skin ailments who though received appropriate medication weight gain for them was suboptimal (data not shown). Also this study was conducted simultaneously in all the in Primary Health Centers in Yavatmal district which includes involvement of Medical officers as well as all the health staff and anganwadi workers. Involvement of such a large

and different category of staff leaves the scope for differing individual involvement and quality of activity could not be controlled rigorously which may affect the quality of implementation of activity and outcome i.e. weight gain in children.

Apart from supervised nutrition supplement in CDC, main emphasis was on nutrition education to parents so that appropriate food supplements prepared from readily available material and appropriate frequency of feed would be continued in home. Nutrition education was imparted by Medical officers and health workers who were trained initially at district level. Also Temporary kitchen was established at primary health centre for preparation of daily feeds in which anganwadi workers and supervisors taught the guardians of admitted children how to prepare the nutritious food at home by involving them in preparation of feeds. It was observed that weight gain during follow up period was significantly less than during admission period which could be due to lack of supervised supplementary nutrition but may be partly due to the fact that implementation of lessons learnt at CDC could not be followed by parents when at home. Similar observations were reported by Deepak et al ⁽¹⁴⁾. More dedicated follow up and community based care of children may improve outcome of hospitalized care. This aspect of growth monitoring of children post discharge from CDC's or supervised nutrition programs in the community on weight gain of undernourished children need to be further studied.

It was observed that in CDC's improvement in grades of undernutrition was significant in G-IV children and no significant improvement in G-II children. Daily weight gain too was highest in G-IV children. Though present study could not explain the findings, it may be that severe undernourished children respond better to supervise nutrition program. Azhar S S et al also observed that weight gain per kilogram of body weight was directly proportional to the severity of malnutrition(16). Daily weight gain was also significantly better in 7-12 month age group

which may be to some extent due to usual higher weight gain during this period.

Overall CDC's found to be useful in improving weight in undernourished children but also emphasizes importance of nutrition education and follow up in community after discharged from CDC's to sustain the positive gains. A study by Maria T Bredow also observed that when undernourished children were followed up monthly in community and management consisted of carefully delivered dietary advice, antibiotics, anthelmintics, and vitamin supplements, all children improved ⁽¹⁷⁾.

This study had some limitations. As the study included all PHCs and data was gathered individually by Medical Officers of particular PHC quality of data was not well regulated and outcome was relied on reported information in routine reporting. During follow up period growth monitoring and nutrition education was provided by anganwadi workers and information was gathered by her. There was no direct supervision from medical officer or from district level which again leaves scope for varying quality of activity and reliability of data. As the weight gain in 72 G-II children was lowest it undermines the overall weight gain. It may suggest that CDCs were more beneficial to severely undernourished children but definitely need further assessment. Also the classification of severe underweight is according to IAP classification which was used at that time by ICDS department and not according to new WHO classification. New classification might have change the proportion of children selected and also would have effect on outcome, thus further studies with newer criteria's for severe undernutrition may further clarifies the role of supervised nutrition supplements at primary health centre level.

Despite of the limitations study did showed the value of intensified supervised nutrition supplement to severely undernourished children and at the same time emphasizes the importance of nutrition education and follow up in community which need to be explicitly introduced in future planning of CDC's.

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Annexure 1.

Rajmata Jajau Mother-Child Health & Nutrition Mission								
For 1 to 6 days			Energy in Kcal/ Protein in Gm					
SN	Time	Food for each child	7 mon to 3 years			3 years to 6 years		
			Energy	Protein	Quantity	Energy	Protein	Quantity
1	6.00 am	Cow milk	34	1.6	50 ml, half bowl	51	2.40	75 ml, one bowl
		Sugar	40	0.0	10 gm, two spoon	40	0.0	10 gm, two spoon
		Amylase powder	34	1.5	10 gm, two spoon	68	3.00	20 gm, four spoon
		Oil	90	0.0	10 gm, two spoon	90	0.0	10 gm, two spoon
		Water			As required			As required
Total		Amylase paste	198	3.10	80	249	5.40	115
2	8.00 am	Cow milk	34	1.6	50 ml, half bowl	51	2.40	75 ml, one bowl
		Sugar	40	0.0	10 gm, two spoon	40	0.0	10 gm, two spoon
		Soya Satu Amylase powder	35	1.75	10 gm, two spoon	53	2.6	15 gm, three spoon
		Oil	90	0.0	10 gm, two spoon	90	0.0	10 gm, two spoon
		Water			As required			As required
Total		Amylase Soya paste	199	3.35	80	234	5	110
3	10.00 am	Seasonal fruit	50	0.50		50	0.50	
4	12.00 noon	Chapati –one(Dry 20 gm)	68	2.40	40 gm, One	68	2.40	40 gm, One
		Vegitable	5	0.44	20 gm , One bowl	10	0.88	40 gm, four bowl
		Solid Dal(Dry 5gm)	17	1.12	10 gm, half bowl	17	1.12	10 gm, half bowl
		Rice	0	0	0	52	1.00	50 gm, one bowl
		Oil	90	0.0	10 ml, 2 spoons	135	0.00	15 ml, three spoon
Total		Lunch	180	3.96	80	282	5.4	155
5	2.00 pm	Cow milk	34	1.6	50 ml, half bowl	51	2.4	75 ml, one bowl
		Sugar	40	0.0	10 gm, two spoon	40	0.0	10 gm, two spoon
		Amylase powder	34	1.5	10 gm, two spoon	68	3.00	Four spoons
		Oil	90	0.0	10 gm, two spoon	90	0.0	10 gm, two spoon
		Water			As required			As required
Total		Amylase paste	198	3.10	80	249	5.40	115
6	4.00 pm	Curd	60	3.1	100gm, one bowl	60	3.1	100gm, one bowl
		Sugar	40	0.0	10 gm, two spoons	40	0.0	10 gm, two spoons
		Curd-Sugar	100	3.1	110	100	3.1	110
		OR						
		4.00 noon	Egg preparation	87	6.6	50 gm, one egg	87	6.6
	Oil	45	0.0	5 ml, one spoon	45	0.0	5 ml, one spoon	
Total		Egg preparation	132	6.60	55	132	6.60	55
7	6.00 pm	Boiled Potato	49	0.80	50 gm	49	0.80	50 gm
		Oil Tadaka	45	0.00	5 ml, one spoon	90	0.00	10 ml, two spoon
Total		Boiled potato	94	0.80	55	139	0.80	60
8	7.30 to 8.00pm	Chapati-One (Dry 20 gm)	68	2.40	40 gm, One	68	2.40	40 gm, One
		Leafy/Fruit/Vegeta	5	0.44	20 gm, one bowel	5	0.44	20 gm, one bowel

		ble						
		Solid Dal (Dry 5 gm)	17	1.12	10 gm, half bowl	17	1.12	10 gm, half bowl
		Rice	0	0	0	52	1.0	50 gm, one bowl
		Oil	90	0,00	10 gm, 2 spoon	135	0.0	15 ml, three spoons
Total		Dinner	180	3.96	80	277	4.94	135
Grand Total			1199	21.87		1580	30.54	
If one egg is given Kcal-1231 and protein-25.37 gm					If one egg is given Kcal-1612 and protein-34.04 gm			
Child should be feed as per his appetite and will. He should not be forced to eat.								

Annexure 2

Rajmata Jajau Mother-Child Health & Nutrition Mission

For 7 to 21 days

Energy in Kcal/ Protein in Gm

SN	Time	Food for each child	7 mon to 3 years			3 years to 6 years		
			Energy	Protein	Quantity	Energy	Protein	Quantity
1	7.00 am	Cow milk	51	2.40	75 ml, one bowl	68	3.20	75 ml, one bowl
		Sugar	60	0.0	15 gm, three spoon	80	0.0	10 gm, two spoon
		Amylase powder	51	2.25	15 gm, three spoon	68	3.00	20 gm, four spoon
		Oil	90	0.0	10 gm, two spoon	108	0.0	10 gm, two spoon
		Water			As required			As required
Total		Amylase paste	252	4.65	115	324	6.20	152
2	10.00 am	Cow milk	51	2.42	75 ml, one bowl	68	3.20	100 ml, one bowl
		Sugar	60	0	15 gm, three spoon	80	0.0	20 gm, four spoon
		Soya Satu Amylase powder	53	2.6	15 gm, three spoon	70	3.50	20 gm, four spoon
		Oil	90	0	10 ml, two spoon	108	0.0	12 gm, two spoon
		Water			As required			As required
Total		Amylase Soya paste	254	5	115	326	6.70	152
3	12.00 noon	Chapati -one(Dry 20 gm)	68	2.4	40gm, one	68	2.40	40 gm, One
		Vegitable	5	0.44	20 gm, one bowl	5	0.44	20 gm, one bowl
		Solid Dal(Dry 5gm)	17	1.12	10 gm, half bowl	17	1.12	10 gm, half bowl
		Rice	52	1.00	50gm, one bowl	104	2.00	100 gm, two bowl
		Oil	90	0.0	10 ml, two spoons	135	0.00	15 ml, three spoon
Total		Lunch	232	4.96	130	329	5.96	185
4	2.00 pm	Boiled Potato	97	1.6	100 gm, medium	97	1.6	100 gm, medium
		Oil	90	0	10 ml, two spoon	108	0.0	12 gm, two spoon
Total		Boiled potato	187	1.60	110	205	1.60	112
5	5.00 pm	Curd	60	3.1	100gm, one bowl	60	3.1	100gm, one bowl
		Sugar	40	0.0	10 gm, two spoons	40	0.0	10 gm, two spoons
		Curd-Sugar	100	3.1	110	100	3.1	110
		OR						
	5.00 noon	Egg preparation	87	6.6	50 gm, one egg	87	6.6	50 gm, one egg
		Oil	45	0.0	5 ml, one spoon	45	0.0	5 ml, one spoon
Total		Egg preparation	132	6.60	55	132	6.60	55
6	7.30 to 8.00pm	Chapati-One (Dry 20 gm)	68	2.40	40 gm, One	68	2.40	40 gm, One
		Leafy/Fruit/Veget able	5	0.44	20 gm, one bowel	5	0.44	20 gm, one bowel
		Solid Dal (Dry 5 gm)	17	1.12	10 gm, half bowl	17	1.12	10 gm, half bowl

	Rice	52	1.00	0	104	2.0	100 gm, two bowl
	Oil	90	0.00	10 gm, 2 spoon	135	0.0	15 ml, three spoons
Total	Dinner	232	4.96	80	329	5.96	205
Grand Total		1257	24.27		1613	29.52	
If one egg is given Kcal-1231 and protein-25.37gm				If one egg is given Kcal-1645 and protein-33.0 gm			
Child should be feed as per his appetite and will. He should not be forced to eat.							

Annexure 3

S No	Management Criteria	Stabilisation phase in CDC		Growth Phase in CDC	
		Day 1-2	Day 3-7	Day 7-14	Week 3-6
1	Hypoglycemia	10% Dextrose orally			
2	Hypothermia	Keep warm			
3	Dehydration	K-ReSoMal Soln.			
4	Infection	As per Schedule ANEX-2			
5	Micro nutrients Electrolytes & Vit.	Macalvit+, K-sol & B-complex syrup but No Iron	Macalvit+, K-sol, With Iron & B-complex	Iron folic acid & B complex sy.	
6	Cautious feeding	No forceful feeding			
7	Catch up growth		Increase Feed as per child's demand upto 26 week at home		
8	Sensory stimulation	Observe the activities of child upto 26 week at home			
9	Follow up	Daily feeding & Daily weighing			Daily feeding /weekly weighing upto 26 week at home