

**Fulwari Scheme on Community Managed Nutrition Centres in Chhattisgarh**

**Interim Assessment of Changes in Underweight Status**

**Draft Findings**

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**Fulwari Scheme:** Fulwari is an innovative scheme in Chhattisgarh which aims to reduce child malnutrition through organizing community managed nutrition cum day care centres in habitations in tribal blocks. These nutrition centres are known as Fulwari. There are 2850 Fulwari centres across 85 tribal blocks of Chhattisgarh state covering around 35,000 children (6months to 3 years age) as well as around 17000 pregnant or lactating women. Fulwari is collectively managed by the group of mothers. They receive a grant of around Rs.50,000 per annum from government for buying foodstuff for cooking and feeding to children and pregnant/lactating women. Children are fed thrice during their 6-7 hour stay in Fulwari. Provision of eggs, green vegetables and oil are emphasized in design of menu. Mothers take turns to take care of children and each mother contributes one day per week. Fulwari also offers daycare facility for mothers. Community Health Workers called Mitans and their support structure help in capacity building, healthcare linkage for Fulwari and in carrying out the necessary community mobilization. The scheme was initiated in Surguja District where independent assessments showed effectiveness of the intervention in reducing child malnutrition.

**Fulwari Baseline study:** A Baseline Study had been carried out by an external agency for which data was collected from field in October-November 2013. The baseline covered more than 7000 children of 0-3 year age group with around 4000 children belonging to villages where Fulwaris were initiated soon after the baseline. The baseline provides amongst other parameters, detailed information on nutrition status of children.

**Objectives of Assessment:** The objective of the assessment was to find out the change (if any) in nutrition status of children in habitations with Fulwari in comparison to the baseline status. The purpose was to assess whether the roll-out across the state has been effective in reducing child malnutrition after being in existence for slightly more than a year.

**Sampling:** The list of 72 blocks covered under Fulwari Baseline was taken. For each of these blocks, the list of habitations covered under baseline was taken. The baseline had taken place in each block for 5 habitations where Fulwaris were about to start in late 2013. For each of the baseline blocks, 2 habitations with Fulwari (FW) were selected through systematic randomization. For each of the selected habitations, the list of children weighed in baseline was provided to surveyors. 20 Surveyors (from SHRC) were asked to weigh all the children whose names were provided. The surveyors were able to cover 55 blocks, 110 Habitations with Fulwari and 1000 children.

**Methodology:** Amongst anthropometric measures, weights were measured and recorded in the survey for this assessment. Heights will be measured in future surveys for more comprehensive understanding of changes in nutrition status. Using the data on weight, date of birth and survey date, z-scores were computed (WHO standards using WHO Anthro). The z-scores were used for two kinds of analysis:

- a) Cross-sectional comparison: Since there was a 15 month gap between the two measurements for the cohort, most of the children had reached more than 18 months of age. Amongst these, underweight rates were taken for the age group which was above 18 months and below 36 months of age at time of assessment survey. The underweight rates were compared with the underweight rates for children of age group 19-36 months weighed in the sample Fulwaris during Baseline. Comparing children of similar age group provides

more meaningful comparison on effectiveness of Fulwari. As seen in studies like NFHS-3, nutrition status varies considerably with age. Therefore, comparing similar age groups is more appropriate.

- b) Analysis of Grade shifting in Cohort: The cohort of children was defined as children who were 19-36 months of age at the time of assessment survey i.e. who were still within the age group of Fulwari intervention at the time of assessment AND also were part of the baseline survey 15 months before. In the above defined cohort, it was analysed how the children from one kind of nutrition grade to other nutrition grades.

#### Findings from Assessment Survey:

Nutrition Status (Weight for Age) of children age 19-36 months in Assessment Survey (January 2015):

**Table: Nutrition Status – Assessment Survey** (Age 19-36 months at time of Assessment Survey)

Age	n	Normal	Moderate Underweight (Z score: -2 to -3 SD)	Severe Underweight (Z score: -less than -3 SD)	Total Underweight (Z score: -less than -2 SD)
19-24 months	189	62.4%	28.6%	9.0%	37.6%
25-36 months	310	57.4%	30.0%	12.6%	42.6%
<b>19-36 months</b>	<b>499</b>	<b>59.3%</b>	<b>29.5%</b>	<b>11.2%</b>	<b>40.7%</b>

The nutrition status (Weight for Age) of children aged 19-36 months in Baseline Survey (October 2015) was tabulated.

**Table: Nutrition Status – Baseline Survey** (Age 19-36 months at time of Baseline)

Age	n	Normal	Moderate Underweight (Z score: -2 to -3 SD)	Severe Underweight (Z score: -less than -3 SD)	Total Underweight (Z score: -less than -2 SD)
19-24 months	214	44.4%	35.5%	20.1%	55.6%
25-36 months	285	47.4%	32.3%	20.4%	52.6%
<b>19-36 months</b>	<b>499</b>	<b>46.1%</b>	<b>33.7%</b>	<b>20.2%</b>	<b>53.9%</b>

The shift in grades of children from Baseline status was tabulated for children who were in age group of 19-36 months at the time of assessment survey.

<b>Baseline Status – Oct 13</b>	<b>Assessment Status: Jan 15</b>			
	n	Normal	Moderate	Severe
Normal	300	78.0%	18.7%	3.3%
Moderate	127	35.4%	48.8%	15.7%
Severe	72	23.6%	40.3%	36.1%

Of 499 children, 300 were in Normal Grade in October 2013 baseline. Out of them 78% retained their status while 18.7 % dropped to moderate status and 3% to severe underweight status. 127 children were in Moderate underweight Grade in October 2013 baseline. Out of them 49% retained their status while 35 % improved their grade to 'Normal' and 15% dropped to severe underweight status. 72 children were in Severe Underweight Grade in October 2013 baseline. Out of them 24 % improved their grade to 'Normal' and 40% improved to moderate underweight status.

#### **Birth Weight:**

Data was collected on birth weight of children born to pregnant women who were enrolled in Fulwari, from the MCP cards filled by ANMs. The data was triangulated with records kept in Fulwari as well as the weights reported by Mitadin CHWs. It shows that the proportion of Low Birth Weight (<2.5 kg) was 9.7% amongst children born to pregnant women who were enrolled in Fulwari. It is considerably lower than the rates amongst tribal population reported for pre-programme period (RSOC reports around 20% LBW rate for tribal population).

Age Profile	Improvement		
	Moderate	Severe	Total Underweight
19-24 m	20%	55%	32%
25-36 m	7%	38%	19%
19-36 m	13%	45%	25%

Age Profile	CG Baseline Oct13 Report				
	N	Normal	Moderate	Severe	Total Underweight
19-24 m	654	49.4%	32.1%	18.5%	50.6%
25-36 m	1146	46.5%	33.2%	20.3%	53.5%
19-36 m	1800	47.6%	32.8%	19.7%	52.4%

Grade shifting				
Baseline Status – Oct 13	Assessment Status: Jan 15			
	N	Normal	Moderate	Severe
Normal	300	78.0%	18.7%	3.3%
Moderate	127	35.4%	48.8%	15.7%
Severe	72	23.6%	40.3%	36.1%

## Conclusion

- a) Comparing cross-sections of children of age group 19-36 months shows that Underweight rate has come down from 53.9% to 40.7%, a relative decline of 25%. The decline is sharper for Severe Underweight as it has reduced by 45%.
- b) The effectiveness is higher for children who joined Fulwari younger. The children who were 19-24 months age group showed relative decline in total underweight proportion by 32%.
- c) 64% of children in Severe Underweight Category were able to move out of severe underweight category. 35% of moderate underweight children were able to improve their nutrition status to 'Normal'.