

GOVERNMENT INITIATIVE TO SOLVE THE PROBLEM OF MALNUTRITION IN ODISHA: AN ASSESSMENT

Aditya Kumar Patra*

Good health is an important dimension of human development. Sound nutritional status is a prerequisite of good health. Poor nutritional condition particularly among children very often leads to several health hazards and higher chance of morbidity, mortality and cause of early death. An attempt has been made here to examine the picture of malnutrition in Odisha, the state initiatives towards the solution of undernutrition and the resultant outcome. This article tracks the level of undernutrition at state and district level and reasons thereof. Two principal platforms currently addressing nutrition are Integrated Child Development Services and Department of Health & Family Welfare, through initiatives like, Village Health and Nutrition Day, Pushtikar Diwas, Shakti Varta and Mamata scheme. The Lancet Series 2013 identified ten proven 'direct nutrition' interventions for mothers and children which if scaled up to 90 percent coverage could reduce stunting by 20.3 percent, and severe wasting by 61.4 percent globally. But empirical observation depicts a very dismal picture. The second Round Concurrent Monitoring survey of Odisha State and India Health Report: Nutrition 2015 corroborates this. The paper concludes with raising community awareness about 'child caring and child feeding practices' is the need of the hour.

Keywords: *Malnutrition, Spatial Difference, Inequality*

INTRODUCTION

'Five children have died in 20 days at Nagada.... At least 19 children of Juang tribe have died of malnutrition in the last four months at Nagada and its adjoining Guhiasal villages in Jajpur district....Odisha district in throes of child malnutrition.....'. These are the headlines of several National and Regional Dailies of Odisha in recent past. Nagada is situated on the hilltop in a dense forest under mineral-rich Sukinda block. The village is inhabited by 100 families constituting 420 people including 127 children. The limbs of children looked like sticks, their stomachs were swollen. Almost all children within the age group of three-four years are pale, weak and malnourished, with bloated stomachs and dry skin. There is neither a health sub-centre nor a school, nor a fair price shop in the village. The villagers have to trek more than 15 km through a dense forest to reach a motorable road. Technically, the villagers are not covered under any government benefits.

Above para is an assessment of Government Initiative to solve the Problem of Malnutrition in Odisha After 70 years of independence, if a child dies of malnutrition anywhere in the country, it not only puts a question mark on our system and policies but is a shame to the state and the nation. This prompted me to do this endeavour.

Good health is an important dimension of human development. Sound nutritional status is a prerequisite of good health and well-being of the people. Poor nutritional condition particularly among children very often leads to several health hazards and higher chance of morbidity, mortality

**Reader, P.G. Department of Economics, North Orissa University, Sriram Chandra Vihar, Takatpur, Baripada – 757003
E-Mail: akpatra2009@gmail.com*

and cause of early death of child. Despite our achievement in economic progress the fruits of development have failed to provide a better nutritional status to children in our economy. Research shows that the attributes that are significantly contributing to malnutrition and childhood death are lack of access and availability of food, feeding and care practices of child, poor sanitation and hygienic practices. It has been found that there exists a strong correlation between child mortality and child malnutrition. Undernutrition is an important factor contributing to the death of young children. If a child is malnourished, the mortality risk associated with respiratory infections, diarrhoea, malaria, measles, and other infectious diseases is high.

Against this backdrop an attempt has been made here to examine the problem of malnutrition in Odisha. The specific objectives are as follows:

1. To present a picture of malnutrition in Odisha.
2. To analyse the state initiatives towards the solution of undernutrition and the resultant outcome.

METHODOLOGY

To track the trend of undernutrition among children in Odisha vis-à-vis All India level we have used information collected under different rounds of National Family Health Survey (NFHS). Moreover, to study the state of under-nutrition among children below five years of age living in Odisha with respect to socio-economic-demographic variables we have used the information collected under third round of National Family Health Survey. The National Family Health Survey, 2005-06 is the third in the NFHS series of surveys. The first NFHS was conducted in 1992-93 followed by the second in 1998-99. In Odisha, the survey is based on a sample of 3,910 households covered both urban and rural areas of the state. NFHS-3 interviewed 4,540 women aged 15-49 from all the selected households and 1,592 men aged 15-54 from a subsample of households to obtain information on population, health, and nutrition in the state. The household response rate in the state as a whole was 99 percent and the individual response rates were 96 percent for eligible women and 93 percent for eligible men.

Further, to analyse the inter-district variation of child under nutrition we have used the data collected by Office of the Registrar General & Census Commissioner, Ministry of Home affairs, Government of India, for preparation of 'Clinical, Anthropometric and Biochemical (CAB) 2014' fact sheet. The data has been collected from 12540 households spread over 30 districts of Odisha.

Different rounds of National Family Health Survey collected information on several aspects of the growth of child below five¹ years of age. With this data, three anthropometric indices of physical growth that describe the nutritional status of children were constructed. These indices are height-for-age (stunting), weight-for-height (wasting) and weight-for-age (underweight). The extent and intensity of under-nutrition is calculated by comparing the nutritional status of children based on the above measure with that of 2006 World Health Organisation (WHO) International Reference Population (IRP).

Each of the three nutritional status indicators is expressed in standard deviation units (Z-scores) from the median of the reference population, i.e., 2006 WHO IRP benchmark. Normally, children who fall below minus two standard deviations (-2 SD) from the median of the reference population are considered to be moderately undernourished and who fall below minus three standard deviations (-3 SD) from the median of the reference population are considered to be severely undernourished.

Each of the three indices gives information on different aspects of the nutritional status. The height-for-age is a measure of linear growth retardation or stunting. This reflects the chronic under-nutrition either due to inadequate food intake resulting from poor feeding practices or from lack of sufficient intake of food. The weight-for-height index is a measure of body mass in relation to body length and describes current nutritional status. This index is popularly known as wasting, which provides an estimate of acute under-nutrition. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Weight-for-age is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition and is manifested in underweight.

ANALYSIS

Nutritional Status

The estimation of under-nutrition, both moderate and severe, for each of the above mentioned three measures at All India and Odisha level over different rounds of survey are presented in Table 1. Different rounds are not strictly comparable to each other as each round has adopted different cut-off years to estimate the nutritional level of children. However, under-nutrition is less pronounced in Odisha than All India level. Particularly, with respect to stunting the performance of Odisha is better than All India. Broad picture reveals that over the period incidence of under-nutrition has declined in Odisha.

Table I: Trends in Nutritional Status in India & Odisha, 1993-2014

		Height-for-age (Stunting)		Weight-for-height (Wasting)		Weight-for-age (underweight)	
		Severe	Moderate	Severe	Moderate	Severe	Moderate
		%<-3 SD	%<-2 SD	%<-3 SD	%<-2 SD	%<-3 SD	%<-2 SD
NFHS I ^a 1992-93	India	28.9	52.0	3.2	17.5	20.6	53.4
	Odisha	25.2	48.2	3.6	21.3	27.7	53.3
NFHS II ^b 1998-99	India	23.0	45.5	2.8	15.5	18.0	47.0
	Odisha	17.6	44.0	3.9	24.3	20.7	54.4
NFHS III ^c 2005-06	India	23.7	48.0	6.4	19.8	15.8	42.5
	Odisha	19.6	45.0	5.2	19.5	13.4	40.7
RSoc 2014 ^c	India		38.7		19.8		42.5
	Odisha	15.5	38.2	4.9	18.3	11.0	34.4

Note: 'a' Children below 3 years of age, 'b' Children below 4 years of age, 'c' Children below 5 years of age

Source: NFHS I, II, III Rounds and Rapid Survey on Children, 2014

Nutritional Status: A Snap Shot View

Table 2 shows the percentage of children classified as undernourished by selected demographic characteristics. Around 40 percent of children below five years of age are underweight, 45 percent are stunted and 19.5 are wasted. The proportion of children who are severely undernourished is also notable. 13 percent according to weight-for-age and 19 percent according to height-for-age. The proportions of children who are underweight, stunted and wasting increase steadily with child's age up to 12-23 months and then level off, finally declines in the age group of 48-59 months. During the first six months of life, when most babies are breastfed, more than a quarter of child population are undernourished according to the three nutritional indices. Overall, girls and boys are about equally undernourished. Undernourishment generally increases with increasing birth order. Children in families with four or more children are the most nutritionally disadvantaged. First births have lower than average levels of undernutrition on most of the measures.

Undernutrition is substantially higher in rural areas than in urban areas. Although nutritional deficiencies are lower in urban areas than in rural areas, yet in urban areas undernutrition is significant. In urban areas, 34.9 percent of young children are stunted and 29.7 percent are underweight. The percentage of children who are underweight is almost three times as high for children whose mothers have no education than for children whose mothers have completed at least 10 years of education. The educational differentials are still higher for stunting. It is four times high for uneducated mother to their educated counterparts. Undernutrition among children is strongly related to maternal nutritional status. Undernutrition is more common for children of mothers whose height is less than 145 centimetres or whose body mass index is below 18.5 than for other children.

There is a strong inverse relationship between undernutrition in children and the level of wealth of the households that they live in. Six out of 10 children living in the poorest households (households in the lowest wealth quintile) are stunted, five out of ten are underweight and a quarter is suffering from wasting. Children belonging to scheduled castes, scheduled tribes, or other backward classes have relatively high levels of undernutrition with respect to all three measures. Further, undernutrition is relatively high for children belong to scheduled tribe community.

Nutritional Status: A District Level Picture

The following table (Table 3) displays the nutritional status of children below five years of age in different districts of Odisha. Data reveals that undernutrition is most pronounced in Malkangiri, Rayagada, Koraput, Nabarangapur, Bolangir, Kalahandi and Keonjhar. Nutritional problems are least evident in Jagatsinghpur, Kendrapara, Jajpur, Khorda and Nayagarh. However, the problem of stunting and underweight is unacceptably high in almost all districts of Odisha. Region wise we may point out that undernutrition is concentrated in undivided Koraput, Kalahandi and Bolangir area. The situation of costal districts such as undivided Cuttack, Puri and Balasore are somehow in an advantageous situation. The most surprising result of this survey is that the SC & ST dominated hill district of Odisha 'Kandhamal' recorded eighth position in the list of child malnutrition in Odisha.

Table II: Nutritional Status of children in Odisha, 2005-06 by Background Characteristics

	Height-for-age (Stunting)		Weight-for-height (Wasting)		Weight-for-age (underweight)	
	Severe	Moderate	Severe	Moderate	Severe	Moderate
	%<-3 SD	%<-2 SD	%<-3 SD	%<-2 SD	%<-3 SD	%<-2 SD
Age in Month						
<6	11.5	25.9	7.5	28.3	13.1	35.9
6-11	13.2	31.6	6.4	25.6	15.6	33.3
12-23	24.5	50.6	8.2	24.6	16.0	41.3
24-35	21.5	52.8	4.3	19.6	15.0	42.4
36-47	25.0	52.2	3.8	14.1	12.5	46.9
48-59	14.6	40.0	2.7	13.0	9.3	37.9
Sex						
Male	20.4	43.6	6.7	20.6	13.0	39.4
Female	18.8	46.4	3.5	18.5	13.8	41.9
Birth order						
1	16.0	38.0	4.0	15.4	9.6	34.4
2-3	18.0	43.4	4.9	20.9	12.5	39.8
4-5	32.5	58.1	6.6	21.2	20.0	52.7
6+	22.9	64.3	10.2	28.8	25.6	56.7
Residence						
Urban	14.5	34.9	3.9	13.4	9.3	29.7
Rural	20.4	46.5	5.4	20.5	14.0	42.3
Mother's Education						
No education	27.5	57.3	6.9	23.0	21.2	50.6
<5 years completed	22.1	46.3	4.3	20.8	10.9	43.5
5-9 years completed	13.3	38.2	3.4	15.9	7.0	34.1
10 or more years completed	3.6	15.4	3.7	13.8	2.2	18.9
Mother's Nutritional Status						
Underweight (BMI<18.5)	23.6	51.0	5.6	24.2	18.1	50.0
Normal (BMI 18.5-24.9)	17.5	41.8	5.2	17.0	10.5	35.7
Overweight (BMI>25.0)	3.9	17.8	0.0	1.2	3.9	10.2
Wealth Index						
Lowest	28.9	59.6	6.0	24.0	21.0	53.3
Second	19.3	41.9	7.0	18.9	11.1	41.2
Middle	11.8	39.7	3.5	15.4	7.6	32.6
Fourth	5.3	20.5	3.5	17.6	3.2	21.3
Highest	4.1	13.2	1.5	6.6	2.5	10.2
Caste / tribe						
Scheduled caste	23.1	49.7	2.3	19.7	14.8	44.4
Scheduled tribe	28.4	57.2	8.2	27.6	22.9	54.4
Other backward class	16.1	40.8	5.9	17.8	9.8	38.1
Other	12.3	33.6	3.4	12.8	6.5	26.4
Total	19.6	45.0	5.2	19.5	13.4	40.7

Source: NFHS III Rounds

Table III: Nutritional Status of Children below 5 years of Age in Districts of Odisha, 2014

District	Height-for-age	Weight-for-height	Weight-for-age	CUI	
	Stunting	Wasting	Underweight	Index Value	Rank
	Below -2SD	Below -2SD	Below -2SD		
	Moderate	Moderate	Moderate		
Odisha	41.5	20.2	38.9	33.5	
Baragarh	47.1	24.6	46.4	39.4	23
Jharsuguda	38.2	19.4	33.1	30.2	12
Sambalpur	46.1	25.5	44	38.5	21
Debagarh	37.4	30	41.8	36.4	19
Sundargarh	48	14.1	39.3	33.8	13
Kendujhar	48	24.7	47.7	40.1	24
Mayurbhanj	45.7	19.5	40.7	35.3	15
Balasore	44.9	21	43.2	36.4	18
Bhadrak	36.3	18.6	33.8	29.6	11
Kendrapara	24.4	16.6	20.6	20.5	2
Jagatsinghpur	21.3	19.5	14	18.3	1
Cuttack	34.3	13.6	23.4	23.8	6
Jajpur	38.5	7.8	23.3	23.2	3
Dhenkanal	34.5	9.9	28	24.1	7
Angul	35.4	15.1	28.6	26.4	9
Nayagarh	31	16.4	23	23.5	5
Khorda	24.1	21.9	23.7	23.2	4
Puri	25.2	23.6	33.5	27.4	10
Ganjam	41.6	17.8	46.7	35.4	16
Gajapati	43.4	23	41.7	36.0	17
Kandhamal	29.2	26.8	23	26.3	8
Boudha	39.2	28.7	49.5	39.1	22
Sonapur	44.1	18.5	42.7	35.1	14
Bolangir	51.2	27.5	45.9	41.5	26
Nuapada	45.8	18.2	49.8	37.9	20
Kalahandi	44.6	26.9	52.8	41.4	25
Rayagada	48.5	30.6	53.9	44.3	29
Nabarangapur	52.8	23.8	52.8	43.1	27
Koraput	57.7	20.8	52.6	43.7	28
Malkangiri	50.2	33.4	67.4	50.3	30

Source: Odisha CAB Factsheet

Determinants of Malnutrition

Studies have identified poverty as the chief determinant of malnutrition in developing countries that perpetuates into intergenerational transfer of poor nutrition status among children and prevents social improvement and equity (Lareea, 2005; Hong, 2006). The two-way causality of poverty and under nutrition seems to pose a very significant pretext for malnutrition in India (Behrman, 1988; Strauss, 1998). There is a strong inverse relationship between undernutrition in children and the level of wealth of the households that they live in (Thomas, 1990). The economic status of households is determined by wealth index, which is constructed by using data of different household assets and housing characteristics. Households in higher wealth quintile are not necessarily wealthy in monetary terms, but they are better off socioeconomically than the lower wealth quintile. Malnutrition, endemic poverty, food insecurity and low household incomes have resulted in poor nutritional status especially in the most vulnerable communities.

Childhood malnutrition is very often influenced by socio-economic-demographic status of the household. There exists a very good relation between the nutritional status of the child and individual attributes like age, sex, birth order and birth weight of the child. Children are nested into mothers, hence, the mother specific characters like education, occupation, nutritional status of mother and the feeding practices adopted by mother also very well influence the nutritional status of the child. Further, both child and mothers are living in a household the socio-economic status of the household such as poverty level, economic status and the ethnicity also influences the nutritional standard of the child. Above all the residential status of the family, viz, rural, urban, hill area has some influence on nutritional level, particularly with respect to the facilities available in the place of residence.

Immunisation plays a crucial role in complementing actions to improve nutrition. The link between undernutrition and infectious diseases is cyclical. Poor nutrition increases vulnerability to infections, which in turn worsen nutrition status. Above matter may be represented through a diagram given below.

There are three broad aspects of under-nutrition that must be kept in mind. These are:

The ability to access to food items. This mainly depends on household income or the ability of the household to afford for a minimum level of consumption. The poverty rate is therefore the standard indicator of the accessibility of the consumer for nutritional requirement. Other possible indicators are household assets like land, house, and immovable property.

Household knowledge, information and practice about nutritional diet. This includes knowledge of the family about the locally available foods that are rich in nutrition. This depends on, (a) traditional age old knowledge (b) ability to read and availability of reading material on nutrition (c) access to media like electronic and print media that disseminates the information on food and nutrition (d) special programmes that educates mother about child rearing and nutrition like Integrated Child Development Services (ICDS).

State of health of the child. Even if right kind of food and nutrition is available a child may not be able to consume and / or absorb the nutritional content of the food properly due to ill health and sickness.

Government Initiatives

Undernutrition is a persistent challenge. Given the multiple determinants of child undernutrition,

a range of inputs across sectors are required. The two principal platforms currently addressing nutrition are Integrated Child Development Services (ICDS) within Department of Women & Child Development (DWCD), and Department of Health & Family Welfare (DHFV).

The Odisha Health Sector and Nutrition Plan (OHSNP) has been implemented by the Government of Odisha (GoO) since April 2008. In order to support greater convergence and bring in essential support from other Departments, on 9th November 2010 the multi-sectoral Nutrition Council was formed, with a view to driving action to improve nutrition in the State. The Nutrition Council was an innovation. The Government of Odisha was one of the first States in India to respond to the complexity of malnutrition by establishing a multi-sectoral response through an inter-departmental forum to drive convergent approaches.

The convergence agenda has also percolated to the District and sub-District levels. Integration platforms such as Village Health and Nutrition Day (VHND) and Gaon Kalyan Samitis (GKS) are increasingly used to address undernutrition in rural communities and convergent planning and monitoring meetings at District and sub-District levels are taking place, in order to increase programme effectiveness. Under the Nutrition Operational Plan, a rational continuum of care has been established and institutionalised. It has three linked responses: the Village Health and Nutrition Day (VHND), Pustikar Diwas and the Nutrition Rehabilitation Centre (NRC). Each of these responses is a cog in a cycle of services which is targeted at the specific groups which are most vulnerable. It enables identification of undernutrition, including severe undernutrition, and refers them appropriately into the service which can best meet their needs. It then monitors their progress and triggers any further referral necessary, or enables their discharge back into the community if their recovery has been achieved and verified.

Village Health and Nutrition Day (VHND): It is a joint initiative to strengthen the ongoing Mother and Child Health Services by the Department of Health and Family Welfare and DWCD. This is held throughout the State at AWCs covering a village or cluster of villages and is focussed on growth monitoring and assessment of illness. VHND is run jointly by Anganwadi Workers (AWW) and Auxiliary Nurse Midwives (ANM) as part of the routine services offered to all mothers and children at the community level. once in a month either on Tuesday or Friday to provide the following services:

- A. Health Promotion of Adolescent Girls
- B. Ante Natal Care and Post Natal Care services for pregnant women & lactating mothers
- C. Promotion of Infant and Young Child Feeding practices
- D. Growth Monitoring of children upto 6 years
- E. Identification, referral and follow-up of malnourished children
- F. Management of common childhood illnesses
- G. Family Welfare services
- H. Counselling on Health Promotion

Pustikar Diwas is an outpatient model of management of undernutrition. It takes place in primary health centres (PHCs) and community health centres (CHCs). At Pustikar Diwas, medical and nursing personnel assess, diagnose, and treat children with severe / acute malnutrition and counsel those without any medical complications in the provision of energy-dense food at home,

breastfeeding, deworming, vitamin A and iron supplementation, and information about *nutrition sensitive* interventions, such as safe drinking water, hand washing, and use of latrines. If the case is severe and medically complicated, the child will be referred to the **Nutrition Rehabilitation Centre** where their undernutrition is stabilised and their medical problems treated.

Shakti Varta is an evidence-based initiative designed to deliver a convergent health, nutrition and water and sanitation (WASH) Participatory Learning and Action (PLA) cycle, throughout the fifteen nutrition high burden districts (HBDs) of Odisha. It is based on evidence of the effectiveness of Participatory Learning and Action (PLA) with women's groups in reducing neonatal mortality and maternal depression. Odisha has also introduced the conditional cash transfer programme, **MAMATA**, to promote maternal and child health.

The recent Operational Plan, led by DWCD, set-out a course of action which enhanced the focus on 3 target populations:

1. Children below 2 years
2. Pregnant and lactating mothers
3. Adolescent girls (10-19 years of age)

Earlier, ICDS services were geared more towards older children (3-6 years), but it was too late in a child's life to intervene to prevent childhood stunting (World Bank 2010). In India, data showed that stunting and wasting is measurable in children as young as one month of age and may start in the womb; this underscored the importance of the mother's health during pregnancy. A better understanding of the long-term consequences of stunting on the health and education potential of a child, and of their future children (given the high likelihood of inter-generational transmission), also underlined the importance for individuals and wider society of preventing stunting (Victora et al. 2008; Martorell & Zongrone, 2012).

CONCLUSION

As documented by the Lancet Series 2013, there is now global and national consensus about the importance of intervening in the first 1000 days of life from conception to the age of two years and improving the health and nutritional wellbeing of adolescent girls to ensure good pre-conceptual nutritional status. The Lancet Series 2013 identified ten proven 'direct nutrition' interventions for mothers and children which if scaled up to 90 percent coverage could reduce stunting by 20.3 percent, and severe wasting by 61.4 percent globally (Bhutta et al, 2013).

Integrated Child Development Services (ICDS) in India is the world's largest integrated early childhood programme and Odisha has around 71,000 sanctioned centres which provide the services throughout the State. ICDS has six main components: Supplementary Nutrition, Immunisation, Health Check-up, Referral Services, Nonformal Pre-school Education, and Nutrition and Health Education. The first component, Supplementary Nutrition Programme (SNP), involves the supply of food materials to Anganwadi Centres (AWCs) across the country to ensure adequate nutrition for children aged 0-6 years, pregnant and lactating mothers and senior citizens. The two main components of SNP are Morning Snack (MS) and Hot Cooked Meal (HCM) provided to 3-6 year olds in AWCs and Take-Home Rations (THR) provided to the remaining beneficiaries. Take Home Ration [THR] is given to pregnant and lactating mothers, children from 6 months to 3 years as they

do not attend the AWC on a daily basis. The severely malnourished children of 3-6 years are also given THR over and above Hot Cooked Meal. Government of Odisha has taken an in-principle decision to give Ready to Eat [RTE] i.e. wheat-based Chhatua in the form of THR to all eligible beneficiaries as it will ensure that it goes to the intended beneficiary and not entered the family kitty.

Infant and Young Child Feeding Practice

To reduce childhood morbidity and mortality it is necessary to focus on avoiding malnutrition in children below the age of 2 years. Of all proven preventive health and nutrition interventions, Infant and Young Child Feeding Practices (IYCF) have the single greatest potential impact on child survival. Therefore, reduction of child mortality can be reached only when nutrition in early childhood and IYCF specifically are highly prioritized. Government of Odisha has launched an IYCF initiative in the state as Project SURAKHYA. This initiative looks at strengthening interpersonal communication of frontline functionaries for counseling mothers and care givers on improved IYCF practices. The project aims to introduce, and strengthen the key infant and young child feeding practices at the household and community level through:

1. Early initiation of breastfeeding within 1 hour of birth
2. Exclusive breastfeeding till six months of age
3. Complimentary feeding practices from the 7th month onwards
4. Breastfeeding till 2 years of age

Now it is high time to examine the stock of the situation and comment on the progress made so far. The second Round Concurrent Monitoring (CCM II) survey was undertaken by Technical and Management Support Team on behalf of Government of Odisha. This is the largest ever state wide household survey covering 4,81,611 households (with a 90.6% response rate) from all 314 blocks, spread across 30 districts of Odisha between March 2014 and February 2015. The survey focused on rural areas. CCM collects data on key health, nutrition and WASH indicators regarding service utilisation and outcome. Following table (Table VI) details the result of some important nutrition indicators and services provided by the frontline agency.

Coverage of the interventions is far below the required 90 per cent, needed across all the interventions to produce the expected impact. These indicators do not reflect quality dimensions, such as consumption of take home rations (THR) or appropriate identification or action taken where children are below a healthy weight for their age and/or they are losing weight. However, the findings for Pustikar Divas collected in CCM II are encouraging on referral, advice and feedback to the community. Diagnostic tests at Pustikar Divas appear to be lower, with only 40 per cent of all mothers reporting their child had a stool test and only 33 per cent amongst ST mothers.

The pivotal frontline agency for successful operation of Nutrition Operation Plan (NOP) is the Anganwadi Centre (AWC) and Anganwadi Worker (AWW). Let us examine to what extent our AWCs are equipped with the resources and AWWs are competent enough to implement the programme through the ICDS activities. Table VII depicts various facilities available at AWCs.

Table IV: Performance of Several Services Provided under OHSNP (in %)

	ST	SC	Gen	Total	HBD
% Early initiation of breastfeeding (within 1 hour)	41.0	41.4	41.8	41.5	41.1
% Exclusive breastfeeding to 6 months	86.8	82.6	79.0	82.3	80.0
% Continued breastfeeding to 24 months	96.2	95.8	95.6	95.6	95.9
% introducing solid/semi-solid foods between 6-9 months of age	40.5	43.8	53.1	46.8	41.3
% children receiving take home ration from the Anganwadi centre	70.5	73.2	72.3	72.0	71.6
Vitamin A supplementation between 6 and 59 months of age	59.0	62.5	67.2	63.8	
Preventative zinc supplements between 12 and 59 months of age	41.9	40.5	37.7	39.6	42.6
% of children 0-59 months weighed at the AWC in the last 12 months preceding the survey	50.2	48.3	48.3	48.9	51.3
% of children 0-59 months weighed at the AWC whose mothers received counselling after child was weighed	50.3	48.3	48.3	48.9	51.4
Children <5 years who were referred to Pustikar Diwas from the VHND last month	12.6	14.1	11.1	12.3	13.1
Children <5 years who attended their referral to Pustikar Diwas last month and whose caregiver was given nutrition advice	81.8	82.0	76.8	84.2	80.2
Children <5 years who attended their Pustikar Diwas last month and received a community follow visit	69.7	70.2	69.7	70.4	

Source: Concurrent Monitoring II, Odisha State Survey, 2014-15

Table V: Facilities / Services available at AWCs (in %)

AWWs living in AWC village / ward	84.9
AWW having 10 or more year of schooling	74.9
AWCs serving to population more than the stipulated norm	31.0
AWCs functioning in its own building	35.0
AWCs with separate kitchen room	56.6
AWCs having toilet facility	21.5
AWCs having accessibility to drinking water within its premises	40.4
AWCs open for at least 4 hours per day	92.6

Source: India Health Report: Nutrition, 2015

Some of the main challenges faced in effective decentralisation of the ICDS programme relate to capacity building at the ground level. Lack of infrastructure has also caused difficulty in storing food supplies, maintaining hygienic standards and providing separate areas for cooking and for children to play. Although all AWCs are operational, several do not have dedicated buildings. Efforts have been made in the past two years to address this gap on a priority basis by setting up AWCs in school

building where possible and undertaking construction en masse. Separate rooms are necessary for preparing meals and storing two to four weeks' worth of food materials for Hot Cooked Meal (HCM), Morning Snacks (MS) and Take-Home Ration (THR). However, this requirement has not been completely met yet. Findings of an audit by the Voice for Child Rights Odisha (VCRO) found out that only 52 of the surveyed AWCs had their own buildings. This needs a strong administrative thrust in identifying the context-relevant loopholes in the system and timely action will help a lot to success the programme. Training and capacity building of the community is also an essential factor for the smooth deployment of the model.

From the foregoing discussion we may reach the impression that there is no single prescription to eliminate malnutrition; each of the measures listed above have an incremental impact. But the most potent one would be raising community awareness about child caring and child feeding practices. Effort should be geared up to have a dent over the problem.

References / Notes

Notes

- 1 Different rounds of National Family Health Survey adopted different cut-off age to analyse the problem of undernutrition among children. 1st Round of NFHS examined children under age 3 years, 2nd Round of NFHS examined children under age 4 years and 3rd Round of NFHS examined children under age 5 years.

References

- Behrman JR, Deolalikar AB, (1988), Health and Nutrition, Handbook on Economic Development Amsterdam: North Holland Publishing Co, pp.631-711.
- Bhutta, Z. et al. (2013), Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?, www.thelancet.com Vol 382 August 3, 2013
- Concurrent Monitoring II: Odisha State Survey 2014-15
- Hong R, Banta JE, Betancourt JA, (2006), Relationship between household wealth inequality and chronic childhood under-nutrition in Bangladesh, *International Journal for Equity in Health*, 5(15).
- IIPS (2007): "National Report: National Family Health Survey (NFHS-3) 2005-06", International Institute of Population Sciences, Mumbai
- India Health Report: Nutrition 2015, Public Health Foundation of India, New Delhi
- Larrea C, Kawachi I, (2005), Does economic inequality affect child malnutrition? The case of Ecuador, *Socioal Science & Medicine*, 60(1):165-178.
- Martorell, R., et al. (2012), Intergenerational Influences on Child Growth and Undernutrition, *Paediatr Perinat Epidemiol* 26 Suppl 1, pp. 302-314.
- Ramakrishnan U. et al. (2012), Effect of women's nutrition before and during early pregnancy on maternal and infant outcomes: a systematic review, *Paediatr Perinat Epidemiol.*, 26.
- Rapid Survey on Children, 2013-14, Ministry of Women and Child Development, Government of India
- Strauss J, Thomas D, (1998), Health, Nutrition, and Economic Development, *Journal of Economic Literature*, XXXVI, pp.766-817.
- Thomas D, Strauss J, Henriques MH, (1990), Child survival, height for age and household characteristics in Brazil, *Journal of Development Economics*, 33:197-234.
- Victora, C.G., (2008), Maternal and child undernutrition: consequences for adult health and human capital, www.thelancet.com Vol 371 January 26, 2008