

# IMPROVING NUTRITION AND DELIVERY PRACTICES THROUGH TRAINING AND CAPACITY BUILDING IN THE LARGEST SCHOOL MEAL PROGRAMME

**\*Iksha Chhabra**

Consultant and Technical Advisor (Projects), Swami Sivananda Memorial Institute, New Delhi  
chhabraiksha@gmail.com

## ABSTRACT

**Background:** *Having achieved delivery of cooked food in all states and reaching out to children (6-14 yrs) through centralized and decentralized delivery model Mid Day Meal scheme has not been able to achieve its own mandate of providing nutrition. Many studies have attributed gaps in delivery to lack of awareness and trained human resource in preparation of cooked meals.*

**Objectives:** *A pilot study was undertaken in two blocks of Faizabad district with an objective of providing interventions in area of human resource development and community participation.*

**Methodology:** *Through baseline survey (n= 70 schools) in two blocks, issues in delivery were studied and provided specific interventions. Results:* *Baseline survey established the fact that quantities consumed by the child do not provide prescribed nutrition. Menu was standardized for amounts and standard Operating Procedures (SOPs). Pictorial training manual was developed to train master trainers as well as cooks. Location specific training using local idiom was used and campaign was conducted to enhance community participation in 45 villages. Conclusion:* *Accomplishing comprehensive improvement without proper human resource policy is a challenge especially in rural areas. Developed Standard Operating Procedures (SOPs), awareness and capacity building through campaigns and training had positive impact on delivery of nutrition.*

**Key Words :** *Mid-Day Meal; Human Resource Development, Standard Operating Procedures, Community Participation, Capacity Building*

## INTRODUCTION

The National Programme for Nutritional Support to Primary Education (NP-NSPE) was launched on 15th August 1995 and was universalized following the landmark order of the Supreme Court on 28 November 2001. The order directed the state governments to introduce cooked mid-day meals in all government and government-assisted primary schools within six months. Due to the speed

of expansion dictated by the dateline of six months for compliance with the framed guidelines, the scheme has not been able to address the qualitative issues for delivery of nutrition. Today, the scheme is covering 10.68 crore children in 12.12 lakh schools. Though many reports testify that mid-day meal increases attendance, improves quality of education, brings social and gender equity however, lack of information on the NP-NSPE guidelines; inadequate funds for utensils and infrastructure; low and delayed reimbursement of salaries; lack of support from school staff and poor working conditions leading to low motivation in the MDM staff members have also been highlighted (Robinson, 2007; Verma, 2008; Nambiar, 2012).

**Table 1: Prescribed nutritional content for primary and upper primary classes under MDM.**

<b>Nutritional Content</b>	<b>Primary</b>	<b>Upper Primary</b>
Calories	450	700
Protein	12 g	20g
Micro - nutrients	Adequate quantities of Micro nutrients like Iron, Folic Acid and Vitamin A and deworming medicines etc.	

Source: NP-NSPE. Guidelines for Central Assistance under the National Programme for Nutritional Support to Primary, 2006

Reports also reveal limited use of vegetables in MDM, unhygienic cooking and working conditions, lack of variety in the menu and interrupted services with compromised quality (Jain,2005; Khera, 2006; fifth joint review mission reports, 2013). Food Security Act (Schedule II) the legal designates the quantities of Protein and Calories to be delivered per child through cooked food (Table1). However, ensuring compliance in the delivery of protein and calories is complex and requires a comprehensive review of all aspects of MDMS (Afridi, 2010; Anuradha De, 2007; Nambiar, 2008). The fifth joint review commission report under MHRD have also registered that there is no compliance either in terms of quantity of cooked food and in terms of nutrition (Table 2). From the gaps registered in various review studies (Planning Commission, 2010; Deodhar, 2010; Fifth Joint Review Mission Reports, 2013) it was evident that delivery of nutrition requires comprehensive overhaul to include interventions especially in areas of development of human resource and community participation. Thus, sponsored by MHRD (Ministry of Human Resource Development) a pilot study was undertaken in two blocks of Faizabad district, Uttar Pradesh to develop methodologies for capacity building and awareness campaign to guide implementation for improving delivery of nutrition.

**Table 2: Fifth Joint Review Mission report MDM**

States	Kitchens surveyed	cooked meals for Primary#	cooked meals for upper primary #	calories served (avg)	proteins served (avg)	
Himachal Pradesh	school based	NA	NA	NA	NA	
Tripura	school based	250-300g	250-300g	392	10.4	egg is served
Gujrat	school based	200-300g	200-300g	392	7.3	
	central kitchen*	175-275g	175-275g	NA	NA	
Andhra Pradesh	school based	260-280g	290-465g	NA	NA	
	central kitchen	90-150g	200-300g	NA	NA	
Delhi	central	154-221g	154-221g	328	6.8	
Uttar Pradesh	NA	NA	NA	NA	NA	
Madhya Pradesh	school based	125-182g	115-165g	380-405	10.5-12.15	
Tamil Nadu	school based			400-690	10-18g	egg is served
# average amounts of the different menus being served						
* quantities provided by the kitchen managers						

Source: compilation of Fifth Joint review mission reports, www.mdm.nic.in

The pilot comprised of the following objectives:

1. to review the practices and implementation in the selected area
2. to create templates for systematic improvement of delivery of nutrition through development of standard operating Practices
3. to develop methodology for capacity building of cooks
4. to create awareness building through campaigns

## **METHODOLOGY**

### **Selection of Blocks and schools**

Blocks Masodha and Sohawal were selected for the purpose of the pilot based on their clustering for differential characteristics as urban and rural sectors, presence of variety of schools, industries/mills, and other social structures. The list of primary and upper primary schools was collected from the BSA (Basic Shiksha Adhikari ) office. From the list of 367 primary and upper primary schools in both blocks, a sample of 70 schools was selected based on random selection criteria of probability proportional to size sampling. Baseline survey comprising of structured questionnaire (pretested in field on 5 schools) was undertaken to gather and analyze data on the current practices, resources used and outcomes of the full array of activities associated with implementation. Structured interviews and field observations guided the information collected for understanding resources, services available, perceptions of scheme in the village and assess the location specific needs. Furthermore, the specific

information regarding nutritional assessments and food consumption behaviour of school children through anthropometric indices and food frequency questionnaire was also undertaken to analyze nutritional gaps. Informed consent was taken from the participants of the study wherein they were told about the purpose of the study. Knowledge attitude and practices (KAP) scores were conducted for cooks of 11 different schools pre and post training. Different tools used for assessment criteria were statistically analyzed guiding interventions in the areas. Training was provided through training handouts which were developed based on local understanding, menu and practices followed in the preparation and delivery of cooked meals.

## **RESULTS AND DISCUSSION**

The detailed survey was conducted to understand various aspects of preparation and delivery of mid-day meals.

Baseline survey findings reported a few gaps and highlighted areas where interventions were required for improvement (Table 3). The areas of interventions designed were a) developing standard operating procedures for the listed menu b) improving work processes and hygiene c) training and building capacities at multiple level for preparation and processes d) providing information and awareness through Kala Jatha for increasing community participation.

Training of cooks and other functionaries at the delivery end cannot be universalized or taught outside context in which they function. It is important that the systems and facilities of cooking at the village school and the levels of understanding of the cooks must be understood while designing training programmes. A training manual was developed for undertaking training of cooks, teachers and master trainers. The manual content comprised of the need, understanding nutrition and health, quality of raw material including water, material handling and storage, menu based Standard operating procedures, hygiene, sanitation and delivery of nutrition. Training handouts were developed in local language with pictorial representations along with pictorial process flows of standard procedures. A three level training programme was designed

- 1) **For cooks:** involved more activity based training to make them understand
  - a) Concept of grain quality,
  - b) Art of tying up dupattas as aprons and head gears since these are not provided
  - c) Concept of consistencies and measures

Pictorial handouts were used as teaching aids. Practical training and hands on training was imparted

### **2) School Management Committee members, Pradhans and mothers**

Training sessions in the form of community field meetings were held with Pradhans, mothers, members

of SMC and others. Training sessions with various stakeholders depicted positive impact. The training curriculum covered the following subjects:

- Understanding of the MDM programme
- Menu and importance of ingredients with introduction to deficiencies
- Portion sizes and consistency
- Hygiene –personnel, kitchen and environmental
- Safety and Health
- Feedback and monitoring

### 3) Training of trainers – Nayya Panchayat Resource Centers (NPRC) members

Around 50 members of NPRC were trained in 4 training sessions. NPRC members are part of schools and each NPRC member supervises the activity of 12 schools. Training with NPRC members not only helped built their capacities and also define monitoring parameters which can be observed to understand processes in schools. The NPRC members were trained as master trainers in order to provide continuous and practical field level training. Pre and Post knowledge assessment depicted an improvement (Table 4) Training sessions with various stakeholders did show an impact (Table 5) and reflected that regular training would not only improve effective delivery but also minimize the need for monitoring as it will aim for minimizing errors at all levels.

**Table 3: Concerns for interventions for various parameters in the baseline survey conducted in schools (n=70)**

S.no.	Parameter	Schools (n=70) Percentage	Concerns for interventions Low-L, High-H
<b>Infrastructure available</b>			
	Presence of kitchen sheds	88.6	L
	Availability of separate stores	65.7	L
	Storage of grains done separately	16	H
	Inappropriate work space in kitchen	92	H
	Cooking carried out in open	47	H
	Separate washing area available	9	H
<b>Raw material and storage</b>			
	Kitchens satisfied with Grain quality	68.8	L
	Presence of measures	56	L
	Use of branded spices with quality assurance marks	61.8	L
	Quality of spices assessed on physical parameters	14.7- Good 58.8 Satisfactory	L
	Water used for cooking purposes	Satisfactory – as per IS 10500	L

<b>Hygiene and safety at work place</b>			
	Satisfactory Personnel hygiene and its awareness	14	H
	Hand washing followed before start of work processes	37	H
	Kitchen hygiene on various parameters- Satisfactory	22	H
	Storage of wood fuel in kitchens	79.7	H
	Excessive Smoke in kitchens	53 other kitchens were operating in open	H
<b>Quantity and quality of food delivered</b>			
	Quantity of food delivered –satisfactory	81	L
	Delivery of proteins and calories as per norms- (lab testing of samples from few schools revealed)	Average gap in calories is 23-28 percent Average gap in proteins 45-52 percent	H
	Quality of cooked food- satisfactory	36	H

*Table 4: Pre and post training assessment of the TOT programme with NPRC members*

<b>Impact of training (n=36)</b>	<b>Pre training %</b>	<b>Post training %</b>
Aware of the quantities according to the guidelines	33	82
Observe the process of meal preparation	61	85
<b>Key observations</b>		
Grain allocation	90	90
Regular supply of food	81	86
Washing and cutting of vegetables	23	75
Personnel hygiene- nails	40	75
Cooking process and quantities	31	69
Storage of raw materials	23	66
Handwashing practices	40	83
Use of soya nugget in food	22	66
Kitchen cleanliness	53	67
<b>Willing to participate in training of cooks who should be trained</b>	8	64
Cooks	83	97
Pradhans	56	83
SMC members	89	97
Headmasters	56	85
Teachers	36	69

<b>How to improve MDM</b>		
Food to be cooked with desired quantities	50	87
Cooks to be supervised and trained	88	94
MDM to be run by HM only and not pradhans	50	49
New innovations like smokeless stoves to be installed	11	70
Training to be done regularly	58	72
Increase the conversion cost	90	94
Authority should be willing to listen to complaints	62	86

*Table 5: Impact of training on cooks and SMC members for various parameters*

<b>Parameters</b>	<b>Pre- training feedback (%) n=75</b>	<b>Post-training feedback (%) n=75</b>
Knowledge about nutrients from food	20	64
Amount of ingredients in MDM except grains	28	87
Any three checks on raw material	29	87
Any five good practices for workprocess for MDM delivery	32	96
Naming two nutritional deficiencies	33	72
Understanding quality of cooked food	17	73
Knowledge of procedure and consistency for meal preparation	30	74

Awareness is a prerequisite for bringing change. A Campaign “Sehatmand ho apna jahan” was designed for building awareness regarding the prerequisites for achieving nutritional benefits from the scheme. The Kala Jatha campaign with “nukad natak and songs” covered 45 villages in a span of 12 days. Campaign material comprised of posters, stickers, pamphlets, slogans made parents and other community members understand the scheme and felt the need for it. The review of the MDM in the area reported the following field facts which need to be considered for placement of any intervention.

- Government schools are increasingly catering to the most under-privileged in rural sectors like the farm labourers. Unless made aware of the relation between hunger and child learning process parents prefer to take children to farms rather than school during harvest.
- A large number of children come to school on an empty or near empty stomach to school, for these children the Mid-Day meal is the first and the main meal in a 24 hour cycle.
- The Village Pradhan and the Head Master are the elite power in the village. The women cooks and children are the most, socially economically and politically, dis-empowered persons in the village. The two extremities create a gross imbalance in the power equation.
- There is a stronger need to involve the community heads who when approached during awareness sessions were keen to fully participate in the scheme for any social audits for effective implementation.

## CONCLUSION

The study reported that although rural schools provided 80 % of the quantity of food prescribed in the MDMS guidelines, they are unable to meet the calories and protein requirement. Standardization of work processes, practical training of cooks for Standard Operating procedures and multilevel training and awareness campaign resulted in an improvement in the delivery of nutrition.

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