

Strengthening the Mid-Day Meal Scheme through MIS

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Abstract

The present paper deals with strengthening of the Mid-Day Meal Program (MDMP) through the use of Management Information System (MIS). The authors discuss the implementation of MDMP in India and the current system that is being used for implementation of the program. The drawbacks in the current system are identified and the authors highlight the use of MIS and Interactive Voice Response System (IVRS) in implementing the MDMP in a better manner. The benefits and challenges of IVRS are discussed in detail later in the paper and the authors suggest the road ahead so that better results can be reaped out of this program.

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1. Introduction

The Mid-Day Meal Program or MDMP is a program of ‘Nutrition Support to Primary Education’ and is considered as a means of mitigating the classroom hunger to all children below the age of 14 years who are enrolled in schools. Mid-day meals, as a public welfare concept in India, dates back to 1925 when such a project was launched for the underprivileged children in the then Madras Corporation area. One of the pioneers, Madras Corporation started providing cooked meals to children in Corporation schools in the Madras city; the programme was later introduced on a larger scale in 1960s. Tamil Nadu’s mid-day meal programme is among the best known in the country.

It was aimed at improving enrolment, attendance and retention, while simultaneously improving the nutritional status of students in primary classes. It helps the students belonging to disadvantaged sections to attend the schools more regularly and it helps them to concentrate on classroom activities. The Mid-Day Meal Programme does not merely aim to provide cooked meal but to provide a meal which satisfies prescribed nutritional norms. Not only that, it also affects the physical and mental growth and helps in reducing the gender gap in education, since it

enhances female school attendance.

Poor enrolment and high school dropout rate are attributed to poor socio-economic conditions of the people, child labour, lack of motivation and poor nutrition status of the children. Nutrition Support to Primary Education (NP-NSPE) popularly referred to as Mid-day meal programme (MDM) is considered as a means of promoting improved enrolment, school attendance and retention. Simultaneously, it may improve the nutritional status of primary school children. With children from all castes and communities eating together, it is also a means of bringing about better social integration. The National Programme of Nutritional Support to Primary Education was launched as a centrally sponsored scheme on 15th August 1995, initially in 2408 blocks in the country to children in Classes I-V of govt/govt aided, local body schools, etc. It consisted (a) free supply of food grains @ 100 gms/child/school/day and (b) subsidy for transportation of food grains up to a maximum of Rs.50/quintal. In addition to food grains, MDM involved two other major inputs, i.e. cost of cooking (cost of ingredients, fuel, wages/remuneration to personnel or to an agency responsible for cooking) and provision of essential infrastructure (kitchen-cum-store, adequate water supply for cooking/drinking, washing, cooking devices, utensils etc).

Universalization of primary education being our national goal, MDMP was launched with the objectives such as increase enrolment; improve school attendance as well as retention, Promote social integration, improve nutritional status of the primary school children and Inculcate good food habits in children. MDMP was popularized in 1960 and has become the largest School feeding Scheme in the World. Implementation of MDMP in all the states with the combined efforts of Central and State Governments. From September 2004 onwards cooked meal scheme was started in all the primary schools. 11.04 crore children were covered under MDM Scheme during 2009-10. During 2010-11, 11.36 crore children i.e. 7.97 Cr. children in primary and 3.39 Cr. children in upper primary had been covered in 12.63 lakhs institutions. During 2011-12 total coverage of children against enrolment was 10.52 crore (i.e. Primary-7.71 crore and Upper Primary 3.36 crore children). During 2012-13, 10.68 Cr. children (Elementary level) had been covered in 12.12 lakhs Schools. 10.45 Cr. children were covered in 11.58 lakhs Schools during 2013-14.

Some of the key objectives of the MDMP are protecting children from classroom hunger, increasing school enrolment and attendance, improving socialization among children belonging to all castes, addressing the issue of malnutrition among children and social empowerment of women by creating employment.

2. Reporting Structure of Present Model

Currently, reporting structure of present model involves the following steps:

- Under this scheme, records are to be maintained regularly and monthly reporting is to be done without fail.

- A MDM register at school/ block/ district level for monthly physical & financial information is to be maintained which help in verification of facts.
- The schools fill up the number of students availing mid-day meal on daily basis in the school level in the MDM register. This number is taken from the attendance register each morning. This helps in estimating the ration to be used each day and prevents wastage of food.
- The data provided by schools is supposed to be compiled at the block level and further at the district level.
- The district office submits the district-wise data so compiled to the Mid-Day Meal Authority (MDMA) on monthly basis.
- After all compilation a Quality Progress Report (QPR) is generated through the system.

3. Problems in Prevailing System of Information Flow

Some of the problems that are identified in prevailing system of Information flow are listed herein. These are issues that are overlooked at all levels. This could be due to negligence on the part of stake-holders or lack of resources and infrastructure, which is common in rural parts of the country. It is seen that school-wise report is not available at the district/ state level which leads to ambiguity in reporting. The time lag in receiving the data from school to state level may leave scope for data manipulation/ corruption/ distortion, which may further aggravate the situation by leading to excess physical/ financial reporting, thus making a dent on the scarce resources available for development of the State and overall welfare of the society.

Secondly, due to time lag in the present system of data flow, remedial actions/ measures may get delayed and may jeopardize the efficacy required of the system given the sensitive nature of the scheme. The delay leads to piling up of reports that are available. This in turn leads to issues being hushed up under files which otherwise would have needed immediate action. Thirdly, non- availability of exception reports where parameters like number of schools where meal was not cooked say for 3 days or more, or, where number of students who availed meals was greater than a certain percentage present in school, are available for decision-making. Apart from that, in case of delay in information from some schools, data for such schools is only available the next month, thus leading to discrepancy in data reported. There are chances of redundancy and chaos as well.

Physical inspection and monitoring of the scheme is presently based on random selection of schools and not on exception basis which may be possible once the MDMA and the State Government is facilitated with daily data of the students who availed or did not avail the meal on a particular day.

Hence, looking at the problems in the prevailing System of Information Flow, the authors stress on the use of Interactive Voice Response System (IVRS). In the section that follows, the need for the IVRS based system has been discussed.

4. Need for IVRS based Daily Monitoring System (DMS)

The IVRS (Interactive Voice Response System) based Daily Monitoring System (DMS) of the Mid-Day Meal Scheme is an initiative of the Mid-Day Meal Authority of Government of Uttar Pradesh. The system was first introduced in Uttar Pradesh wherein, efforts at introducing a technology-driven method to monitor the Mid-Day Meal scheme were launched in July 2010. This method uses a technology known as Interactive Voice Response System (IVRS) to create a real time database on the number of mid-day meals served in UP's schools. The IVRS based DMS system envisages an automated Management Information System (MIS) where data of children availing mid-day meal would be available on daily basis. In view of the developments in the field of internet based technologies and onrush of mobile telephony in the rural area, the system is conceived on the basis of an interface between computer and mobile phone.

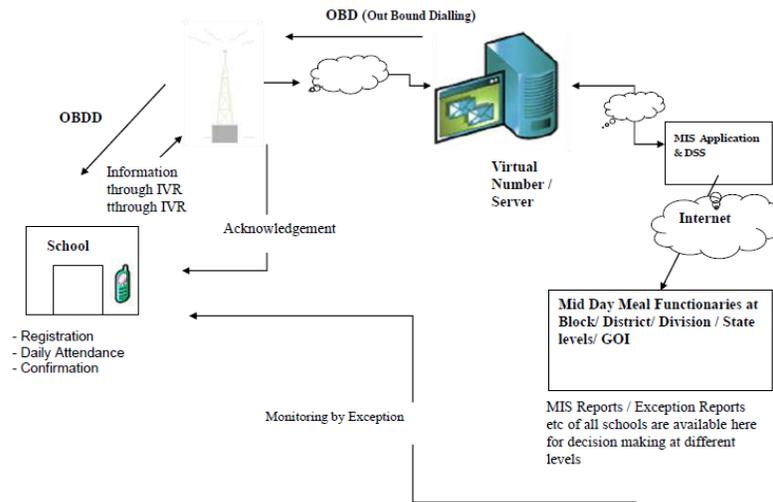
As per some reports, it was observed that there was no proper mechanism to monitor the implementation of the scheme. Even the quality and quantity was not being monitored properly, and there were flaws at the grass root level. Henceforth, a need for web based MIS for transporting data directly from school to the state level was felt. SMS based Daily MIS was suggested but its implementation also had glitches. Hence, Daily Monitoring System based on toll-free SMS was brought as an alternative. However, toll-free SMS across networks is not possible even now. Information access on real time basis via IVRS (Interactive Voice Response System) through an Out Bound Dialling solution was thought of as the only feasible alternative.

The following steps were taken to make the system work:

- Making School as the basic unit for information flow & monitoring rather than district.
- DPR was developed.
- The Projects were assigned.
- Codification of about 1.52 lac schools was done.
- Mobile numbers of about 4.5 lakh headmasters, Assistant Teachers, and Shiksha Mitras were collected.
- Operational Manual was published and distributed to all the teachers in the State.
- Online demo and training was conducted in all the 820 Blocks of Uttar Pradesh.
- Real time data collection was started in June 2010, which was within two months of record time of assigning the project.

4.1 Understanding IVRS

The Interactive Voice response System (IVRS) is a technology that allows a computer to interact with human beings through the use of voice and keypad inputs. The IVR systems are typically used by corporate houses to service high call volumes and reduce cost.



Flow chart of IVRS process

(Source: Intrahealth International, 2011, IVRS based Daily Monitoring System of Mid-Day Meal Scheme Uttar Pradesh, The Manthan Project, Lucknow.)

4.2 Implementation of the system

The system works in the following manner:

- IVR calls from 88086 11111.
- In case one misses out replying to the IVR call, one needs to give a missed call to the same number.
- The System will call back on its own within 5 minutes of the missed call.
- “0” info means the meal not served.
- The Helpline/Toll free number is 1800 1800 666.

4.3 Features of the System

Basic features of the IVRS system are mentioned below.

- Daily MIS on MDM through Interface between Computer and Mobile telephone.
- Interactive Voice Response Based.
- System generated daily IVR calls to 1.52 lac schools within about 2 hours.
- Teachers to reply to the IVR calls for informing number of students availing MDM on that day.
- Info to be given by way of keying-in on one’s mobile phone.
- System of repeat calls/ reminder SMS/ calling other teachers of the school/ call escalation.
- The information gets patched-in on the computer system.

- MIS generated on a web-based system.
- Daily MIS for MDM to be available at District, Division & State level
- Auto SMS on daily basis to Nyaya Panchayat Resource Centre (NPRC), Assistant Basic Shiksha Adhikari (ABSA) & Basic Shiksha Adhikari (BSA) for schools not serving meals & for those not giving data; auto mails to District Magistrates.
- Helpline available through a Toll-free number for information & for data pulling.

4.4 Benefits of the IVRS

The authors have discussed briefly the implementation and features of the IVRS in the previous sections. Here, the authors briefly glance through the benefits of the IVRS. The system has been successful because of easy functioning and low maintenance. There is a Data ‘pull’ vis-à-vis data ‘push’ feature in the IVRS which means that data is to be fed in the system which then generates results. The teacher need not spend a single paisa from their pockets. It is User of Information that controls the information flow, rather than the sender. Direct and instant information mechanism from grass-root to the State level takes place without involving the intermediate levels. The direct mechanism enhances transparency and validity of data resulting into correct information. The hardcopy of information provided daily by the schools through IVRS is to be verified monthly by the headmaster in monthly meeting. This leads to authorization at the grass-root level itself and also builds the ownership of data provided at school level. The provision of an independent third party Technical Audit for verification of data is also mandated. There is no need for any mobile phones to be given to teachers and the verification is completely outsourced. The government body can now directly monitor without the State government’s interference in the data.

4.5 Challenges before the System

The challenge in implementation of IVRS occurs in schools where MDM scheme is not functioning at all. In such instances, there is no data, no users and no resources. Sustainability through local and administrative support is also required from time to time. The information received might create problem from some people who are not performing their duties diligently. They may fear of being caught for siphoning of funds provided for MDM.

4.6. Potential Benefits

The objectives and potential benefits of the MDM scheme are three-fold: increased enrolment, attendance and retention; improved child nutrition; and social equity (Drèze and Goyal, 2003; Khera, 2006).

Enrolment, Attendance and Retention: The first objective of the MDMS is to increase enrolment and daily class participation by entitling all enrolled children to a hot, cooked nutritious meal at school. Si and Sharma (2008)

examined school-level data to find that in Khurda district of Orissa, the gender gap in enrolment decreased considerably between 1995-96 and 2000-01, when cooked meals were provided to the students rather than dry rations. More specifically, during this period the average annual growth rate in enrolment of girls was 3.86%, while that for boys stood at 3.71%. Drèze and Goyal (2003) acknowledge that there may be factors other than MDM to play when they compare school enrolment across nine districts each in Chhattisgarh, Karnataka, and Rajasthan. However, the period they consider falls immediately after the MDM was introduced and they find that enrolment in Class I increased significantly between July 2001 and July 2012 by 14.5%; in particular for girls, it rose by 19%. More rigorously using econometric techniques (rather than just descriptive school data), Afridi (2011) finds that the introduction of the MDMS raised the average monthly attendance of girls in Class 1 by 10 percentage points, significantly closing the gender gap.

Improved child nutrition: The second major objective of the MDMS is improved child nutrition and the elimination of ‘classroom hunger’ (Drèze and Goyal, 2003; Singh et al, 2012). According to the Food and Agriculture Organisation of the United Nations, (FAO), “nutritional well-being is recognised both as a primary objective of development and an important input into the social and economic development process.” A wide range of literature documents how under- and malnutrition can have severe negative impacts on a child’s physical well-being, continuing well into adulthood (Black et al., 2008; Alderman et al., 2003, Svedberg, 2000; and Gaiha, Jha & Kulkarni 2010). In the context of the MDMS in India, Afridi (2010) has attempted to quantify the improvement in daily nutrient intake of children availing the meals in Madhya Pradesh to find that it increased from 49% to 100%. In particular, she finds that “per school day the scheme improved nutritional intakes by reducing the daily protein deficiency of a primary school student by 100%, the calorie deficiency by almost 30% and the daily iron deficiency by nearly 10%. In the short-run, therefore, the programme can have a substantial effect on reducing hunger at school and protein-energy malnutrition” of children availing the scheme. Thus, it can be seen that the MDMS has immense potential to increase the nutritional intake of beneficiaries; but of course, the impact of the scheme is highly dependent on the quantity and quality of the meals served, which still varies greatly from state to state (Khera, 2006).

Social equity: Apart from enhancing school participation and nutritional intake, the MDMS has been envisioned as a programme which can reduce caste- and class-based discrimination among school-children, thereby promoting social equity. However, studies such as Drèze and Goyal (2003), Khera (2006), and Thorat and Lee (2005) show that subtle – and in some cases, outright – forms of discrimination still exist in various parts of the country. Discrimination within the MDMS takes on two forms: firstly, segregation of children during meal times on the basis of caste, and secondly, opposition to the appointment of *dalits* as cooks. Drèze and Goyal (2003) found that subtle forms of prejudice and discrimination were still prevalent among upper-caste parents, especially in Rajasthan, where they often sent their children with packed food or asked them to come home for lunch, to avoid eating with lower caste children. In 2005, Thorat and Lee studied discrimination against *dalits* within the MDMS and the Public

Distribution System in Rajasthan, Andhra Pradesh and Tamil Nadu. They found that in those areas where accessibility for *dalits* is higher, there was less prejudice and exclusion on the basis of caste.

5. Financing the MDMS

As noted earlier, the potential positive impacts of the MDMS are dependent on the quantity and quality of the meals served. These are, in turn, dependent on the budget provided by the Centre and the states to implement the scheme. According to the minutes of the National Review Meeting with State/Union Territory Secretaries and Nodal Officers held in July 2012, Rs 11, 937 crores have been allocated for the implementation of the MDMS for the current financial year. Of this, 53% has been allocated towards cooking cost, which is used to buy cooking ingredients such as pulses, vegetables, spices, and fuel, and does not include costs for rice and wheat for which separate allocations are made by the Centre. (Government of India, 2012). The MDMS is a Centrally-Sponsored Scheme, and cooking costs are shared in a ratio of 75:25 between the Centre and the states. Over the past few years, the budget for the MDMS has been steadily rising and MDMS allocations in fact increased by 16% between 2008-09 and 2012-13 (Kapur and Chowdhury, 2012). Similarly, expenditure rates have also improved, increasing from 80% in 2007-08 to 94% in 2009-10. However, there are wide inter-state variations: for instance, Chhattisgarh spent more than 90% of its cooking cost allocations in 2010-11; in contrast, Bihar only spent 67% of its allocations that same year, while Jharkhand spent an even lower 38% (Kapur and Chowdhury, 2012).

Thus, the efficiency with which funds are utilised is crucial to realising the objectives of the MDMS. As pointed out by Khera (2006), inadequate budgetary allocations, as well as inefficient spending, would seriously hamper the quantity and quality of mid-day meals. In turn, insufficient and/or unappetising/low nutritional value meals would not only have a direct negative impact on the nutritional intake of beneficiaries, but also on enrolment and attendance and retention. The experience of states such as Tamil Nadu and Gujarat, where the scheme has been expanded to include older children, pregnant women and the elderly, clearly shows that with a proactive and robust administrative system and adequate staff at the school-level the benefits of the scheme can be immense. Recent quantitative analysis (Afridi, 2010 & 2011; Singh et al, 2012) also demonstrates the significant gains to be made in school participation, classroom productivity, educational attainment, and nutritional intake of children. Watch this space to find out soon what the PAISA survey reveals about the MDMS.

6. The Road Ahead

Using of IVRS system has many advantages as it is a feasible system that can be implemented easily. In reference to MDM scheme, linkage with consumption of food-grain and cooking cost can be done which will help in stabilizing the system. The system will help in availability of information on public domain which would make it more trustworthy and transparent. Inspection reports/ photos etc. would be uploaded on website and each school's complete database including food-grain lifted, amount consumed, etc. will be built with time into the system.

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