Original Article

PROCESS EVALUATION OF ROUTINE IMMUNIZATION (RI) AND GROWTH MONITORING SERVICES DURING MAMTA DAY (VILLAGE HEALTH AND NUTRITION DAY) IN SINOR BLOCK OF VADODARA DISTRICT, GUJARAT, INDIA

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ABSTRACT

Background: Immunization plays a very important role in decreasing under-five mortality. Surveys carried out during NFHS and UNICEF revealed that there has been a decline in the coverage levels of different vaccines by as much as 15-40%.

Objectives: To evaluate routine immunization and growth monitoring services in the sistrict.

Material and Methods: A cross sectional observational study was conducted in Sinor block of Vadodara district, Gujarat. Two PHCs out of three PHCs of this block were selected and all thirteen sub centers of these PHCs were selected for monitoring of VHND. One village of each sub center was selected and monitored during Mamta Day for various components of vaccination and growth monitoring.

Results: All Mamta day sessions were held according to micro plan with presence of all team members at all centres. However, supervisory visits were observed in only 23% of the sites. Necessary logistics and vaccines were available at all sites. Cold chain status was satisfactory. 23% of female health workers (FHW) faced problem in technique of giving BCG and Measles immunization. Time of reconstitution was written on BCG and Measles vials at 61.5% sites. Although Anganwadi workers (AWW) weighed children correctly, plotting was not satisfactory in 38 % of children.

Conclusion: Supervision was lacking in majority of the sessions. Vaccine, logistics and cold chain maintenance was satisfactory. Repfesher periodical training need evident perticualrly of Immunization technique for FHWs and Growth plotting for AWWs.

Key words: Mamta Day, Village Health and Nutrition Day, Routine immunization, Growth monitoring, Gujarat.

Abbreviations:

AD syringes-	Auto Disable syringes
ANM-	Auxiliary nurse Midwife
ASHA-	Accredited Social health Activist
AWC-	Anganwadi Centre
AWH-	Anganwadi Helper
AWW-	Anganwadi worker
DLHS-	District Level Health Survey
DTP-	Diphtheria, Pertussis, tetanus
FHW-	Female Health Worker
GIVS-	Global Immunization Vision and Strategy
HMIS-	Hospital Management & Information System

ICDS- Integrated Child Development Services Scheme
INHP- Integrated Nutrition and Health Project
MDGs - Millennium Development Goals
MPHW- Multi Purpose Health Worker
NFHS- National Family Health Survey
NHD- Nutrition and Health Day
NPSP- National Polio Surveillance Project
PHC- Primary Health centre
SRIMs- State Routine Immunization Monitors
UIP- Universal Immunization Program
VHND - Village Health and Nutrition day
VPDs- Vaccine Preventable Diseases
WHA- World Health Assembly
WHO- World Health Organization

BACKGROUND

"Vaccines: With the exception of safe water, no other modality, not even antibiotics, has had such a major effect on mortality reduction and population growth".[1] Since the Millennium Summit in 2000, immunization has moved centre stage as one of the driving forces behind efforts to meet the Millennium Development Goals (MDGs) – in particular, the goal to reduce deaths among children under five years old (MDG 4).[2]

In India, Universal Immunization Program (UIP) performed quite well in the first decade of its introduction between1985 to 1995, the coverage levels for various vaccines reached 70-85% and the incidence of various VPDs rapidly declined in the country. However, since then, there has been a decline by 15 to 20% in the coverage of different vaccines.[3] Overall percentage of fully immunized children aged 12-23 months were 54% for Gujarat during DLHS-2(2002-2004), which increased only to 54.9% during DLHS-3 (2007-08)[4]. For Vadodara district percentage of fully immunized children was higher (63%) during DLHS-3 as compared to that of Gujarat State. Thought it was higher for Vadodara district, it had shown a decline within district as compared to DLHS-2 during which percentage of fully immunized children were 69.8%. For rural areas of Vadodara district this decline was even more significant from 75.7% to 54.7%.[4]

Integrated Nutrition and Health Project (INHP) developed the concept of a Nutrition and Health Day (NHD) which has evolved and has been widely replicated across the country in various forms, most visibly as the Village Health and Nutrition day (VHND). The VHND is to be organized once every month (preferably on Wednesday) at the AWC or any other suitable location. The package of services includes various maternal and child health services of which immunization and growth monitoring are essential services to be provided to all children of village.[5] In Gujarat state, Village Health and Nutrition day (VHND) is known as "Mamta Day" which is one of the four components of Mamta Abhiyan, the other three being Mamta Mulakat (Post natal care visit), Mamta Sandarbh (Referral Services), Mamta Nondh (Record and Reports). Mamta day is a fix day, fix site, preventive, promotive health care service center for mother and child population or village per month.[6]

WHO recommends that areas such as: planning, financing, surveillance, staff and management, social mobilization and links with the community, logistics (including the cold chain), stock management and outreach activities be monitored at district and national level.[7] Under this recommendation for the external monitoring and supportive supervision of immunization program State Routine Immunization Monitors (SRIMs) are nominated from PSM (Community Medicine) departments of Medical colleges. The SRIMS have to monitor the routine Immunization activity i.e. MAMTA Divas on every Wednesday of the month in their allocated district/corporation and help the ANMs to carry out the process effectively and efficiently.[8]

This study was undertaken with the objectives to monitor routine immunization & growth monitoring services and to provide necessary feedback to district and state authorities and suggest corrective actions.

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METHODS

A cross sectional observational study was conducted in Sinor block of Vadodara district, Gujarat during the year 2010-11. This block was identified as "Low performing" in terms of immunization coverage below 80% by state government as per the Hospital Management and Information System (HMIS) data of the year 2009-10. This block having total population of 65,413[9] (2011 census) has three Primary Health Centers (PHCs) namely Sinor, Simli and Sadhali of which latter two had immunization coverage of 77% and 69 % respectively according to reported

HMIS data. So PHC Simli and PHC Sadhali were selected purposively for monitoring of immunization activities and to provide feedback to district and state authorities. PHCs Simli and Sadhali have six and seven sub-centers respectively. Quality of services and coverage of immunization is better in nearby areas of sub center mainly due to easy accessibility and availability of Female Health worker. So in this study, we have selected farthest village from the sub-center to have a better look on quality of services and coverage. Thus total of thirteen villages were selected for this study.

Each selected village was visited on Mamta day. Various components of Mamta Day were observed like: availability of team members (i.e. FHW/ANM, ASHA, AWW, AWH and MPHW), supervisors, logistics and equipments and process monitoring of vaccination and growth monitoring was done in a predesigned study instrument using Govt. of India and Govt. of Gujarat guidelines for VHND monitoring. Interviews of Mamta day team members were also done. Exit interviews of mothers of children brought for vaccination and growth monitoring were conducted to assess the quality of services. On site correction of technique and necessary feedback were provided to team members providing services. Feedback was given to local, district and state health authorities in time for necessary corrective actions.

Finally whole data was analyzed both quantitatively and qualitatively and appropriate statistical test applied wherever applicable.

RESULTS

All thirteen Mamta days were monitored and various components of Village health and Nutrition day were observed with a special focus on vaccination and growth monitoring.

Planning and Management component: All thirteen sessions observed were according to micro plan and beneficiaries were informed on previous day according to guidelines in 12 out of 13 sessions (92%) but list of expected beneficiaries was available only at one session (8%) (Table1). Overall community mobilization was satisfactory. Out of 13 sessions visited, supervisors were present only at 3 sites (23%) and at all sites all team members were present (Table 2).

Table 1: Planning component of Mamta Day (n=13).

Component observed	Number (percentage)
The session site as per micro plan	13/13 (100%)
The beneficiaries have been informed regarding "MAMTA DAY" on previous day	12/13 (92.3%)
IEC material displayed	12/13 (92.3%)
List of expected beneficiaries for this "MAMTA DAY" prepared	01/13 (7.7%)
Community mobilization	Good

Table 2: Availability of service providers and supervisors (n=13).

Team members	Presence (%)
FHW	13/13 (100%)
AWW	13/13 (100%)
MPHW	13/13 (100%)
ASHA	13/13 (100%)
AWH	13/13 (100%)
Other members of NGO	13/13 (100%)
Supervisory cadre	
Female Health Supervisor	3/13 (23%)
ICDS supervisors	2/13 (15.4%)
MO PHC	**0/13 (0%)**

Table 3: Availability of logistics (n=13).

Equipments & Logistics	Mamta days(n=13)
Weighing scale (newborn, adult)	13 (100%)
Weighing scale (Salter)	09 (69%)
Hemoglobinometer	09 (69%)
Functional Hub-cutter	11 (85%)
Thermometer	11 (85%)
Pregnancy testing kit	11 (85%)
Urine examination kit	09 (69%)
Biomedical waste	13 (100%)
Mamta Cards	13 (100%)

Table 4: Availability of vaccines, vaccine logistics and drugs (n=13).

Vaccines	Availability
Vaccine carrier	13 (100%)
Four Conditioned ice-packs	13 (100%)
BCG and its diluents	12 (92.3%)
Measles and its diluents	12 (92.3%)
DPT,TT	12 (92.3%)
OPV	13 (100%)
Vitamin A	13 (100%)
Reconstitution syringes	12 (92.3%)
0.1 cc AD	12 (92.3%)
0.5cc ADS	13 (100%)
Paracetamol tablets/syrup	12 (92.3%)
Emergency drugs kit(AEFI Kit)	**00 (0%)**
ORS	13 (100%)
Zink tablets	10 (77%)
IFA syrup	12 (92.3%)

Table 5: Process evaluation (technique of vaccination) (n=13)

Equipments	Mamtadays
Use of polythene bags for storage of vaccine within carrier	13 (100%)
All the vaccines at session within expiry date	13 (100%)
Presence of freeze-sensitive vaccines in liquid form	13 (100%)
VVM stage I or II on all Vaccines	13 (100%)
Provider knew how to read VVM and when to discard the vaccine	12 (92.3%)
Time of reconstitution written on BCG & Measles	08 (61.5%)
Date of opening written on bottle of Vitamin A solution	12 (92.3%)
Vitamin A given in correct dose	13 (100%)
All AD and Disposable syringes cut with hub cutter Immediately after use	11 (84.6%)
Correct method for waste collection	10 (77%)
ANM giving the 4 key messages	06 (46%)
Beneficiaries asked to wait for half an hour following vaccination	04(30.7%)

Availability of Vaccines, Logistics and Equipments: All vaccines and related logistics were available at all sites except for BCG vaccine, Measles vaccine and 0.1 ml AD syringe which were unavailable at one site (8%). Some of the basic equipments (Weighing scale, Haemoglobinometer, Functional Hub-cutter, Thermometer, etc.) were not available though newborn and adult weighing scales were available at all session sites (Table 3). All essential drugs and vaccines were available at all the sites. However, surprisingly, emergency drugs kit (AEFI kit) was not available at any of the session site (Table 4).

Process Evaluation: We observed that different components of vaccination i.e. vaccination at appropriate age, technique of vaccination, safe injection practice, cold chain maintenance and record keeping.

Cold chain status was satisfactory at all sites. In case of 9 of the 13 session sites (69%), vaccinators forgot to ask beneficiaries to wait for half an hour after vaccinations. Date and time of opening of Measles and BCG vials was not written by female health workers at 5 sessions (38.5%) (Table 5).

Even though trained recently, 3 out of 13(23%) FHWs still faced problem in immunization technique, particularly for BCG. Many FHWs (7 out of 13 sessions) did not give 'four important key messages'[10] to mothers after vaccination.

Growth Monitoring: Anganwadi worker (AWW) weighed children correctly however Plotting was not satisfactory in 38% cases (n=21). Weighing was done only for those children who were brought for immunization. Mothers were informed and explained about weight and grade of nutrition in 43% cases (n=21). Of all the malnourished children brought to the Mamta Day, appropriate actions were taken only in 34% cases (n=9).

DISCUSSION

Mamta Day (Village health and Nutrition day) is celebrated monthly to provide a set of comprehensive maternal and child health services. But our primary focus was on immunization and growth monitoring services as the block was declared poor performing in these services. So we specially focused on different aspects of routine immunization and growth monitoring.

List of expected beneficiaries which is considered necessary was missing at almost all session sites. This leads to more left outs and more number of drop outs being missed for immunization coverage. Supervision by ICDS supervisor and the Medical officer (MO) was lacking. Major lacunae in Mamta Day sessions were lack of monitoring and on site correction by Medical Officer and other supervisors were missing. These results were comparable to **Sanghavi M M et al** [11] and **Patel T et al** [12] who also found these components deficient during their study of process evaluation of immunization services.

Availability of logistics was adequate for giving vaccination and growth monitoring but non availability of emergency drug kit to deal with adverse effect following immunization (AEFI) is a great concern. Cold chain maintenance and overall vaccination process was satisfactory. Technique of BCG and Measles vaccination needs more emphasis during training. On the job training of staff under direct supervision of senior staff is very much needed. Growth monitoring was not done up to a satisfactory level. Weights were either not plotted or plotted incorrectly at many sessions. Referral services for severely malnourished children were not satisfac-

tory. Health and nutritional education was also lacking. Similar findings were observed by **Kotecha et al**[13] in Bhavnagar, Gujarat study. They also observed that giving four important key messages after vaccination and supervisory activity was lacking in majority of session sites. Also growth monitoring component was being ignored at some sessions. We explained the importance of growth monitoring and plotting which was lacking in few sessions and gave suggestion to team members and made onsite corrections where needed. Feedback was shared with the local, district and state authorities and positive feedback were received from all of them.

CONCLUSION

Although all sessions were according to microplan and timely, they all lacked in supervision by PHC and District level staff which is a necessary component to improve quality of services. Availability of all vaccines and related logistics was satisfactory except for the AEFI kit. Cold chain maintenance was satisfactory but few FHW failed to mention date and time of opening on Measles/BCG vaccine vial. While few FHWs faced problem in BCG vaccination, majority of them failed to deliver 'four important key messages' after vaccination. Although weighing of children was proper, few AWWs encountered problem in plotting weight on growth chart. For all such problems onsite correction was carried out at each and every session site.

RECOMMENDATIONS

Observations of present study emphasize the need to strengthen supervision during routine immunization by ICDS supervisor and Medical officer. Maintenance of proper records for making list of beneficiaries a day before RI session and provision of necessary logistics supply especially AEFI kit is needed. Training of all team members for proper growth monitoring and plotting of weight on growth chart should be carried out.

LIMITATIONS

In this study, we could monitor only 13 Mamta days. This may not be sufficient to comment on whole block activities. However we tried to cover all sub center areas of two PHCs out of three PHCs which were declared as low performing blocks.

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