



## 'PROCESS EVALUATION OF MATERNAL HEALTH SERVICES DURING HEALTH AND NUTRITION DAY (MAMTA DIVAS) IN URBAN HEALTH CENTRES OF AHMEDABAD, GUJARAT.'

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### ABSTRACT

**Background:** Limited access to health services impacts maternal and child mortality in India. So, the current study was conducted to evaluate the effectiveness of the maternal health service delivery during the mamta divas at Urban health centres of Ahmedabad district. **Aims/Objectives:** 1) To assess the planning components including availability of logistics/vaccines/other supplies during Mamta Divas sessions. 2) To evaluate the process and extent of activities implemented during Mamta Divas sessions. **Methodology:** A cross sectional study was conducted at the seven UPHCs (including slum and non-slum areas) for duration of 18 months. Total 42 mamta sessions were evaluated using a preformed semi-structured Questionnaire comprising information about planning components, logistics and maternal health services. **Results:** The study showed that maternal health services were consistently provided as per micro-plan. However, 32% of outreach sessions were conducted in poorly defined areas. Out of 42 sessions, only 38% had Hb testing kits with height and blood pressure measurements lacking during 86% sessions, thereby delaying high-risk pregnancy identification. Additionally, side effects of IFA tablets were not explained in 67% of sessions. **Conclusions:** Therefore, the process evaluation of Mamta Divas will serve as a tool to advocate for ways to improve services and highlight strengths and flaws.

**KEYWORDS :** Process Evaluation, Urban Primary Health Centres, Mamta Divas, Maternal Health Services

### INTRODUCTION

Mothers and children are the priority groups in any community. They comprise approximately 71.14 % of the population of developing countries. According to WHO, MCH is defined as "promotive, preventive, curative and rehabilitative health care for mother and child". The targets for MCH are all women in their reproductive age groups i.e., 15-49 years of age, pregnant and lactating women, infants, school age population and adolescents. (K.PARK, 2021)

Throughout the world especially in the developing countries, there is an increasing concern and interest in maternal and child health care. As per the WHO report on maternal mortality, 94% of all maternal deaths occur in low and lower middle-income countries. Overall, the maternal mortality ratio (MMR) in less-developed countries declined by just under 50%. (Maternal Mortality)

India is among those countries which have a high MMR of 97 per lakh live births as per SRS 2018-20 despite of the fact that it has witnessed quite a steep fall along past year. Age wise distribution shows maximum maternal deaths among 20-24 years (32%) followed by 25-29 years (31%). Gujarat has an overall MMR of 57 per lakh live births with 0.14% of lifetime risk. (Office of the Registrar General Government of India, 2020)

Under the ambit of RMNCH+A, one such strategy being implemented in various parts of India including Gujarat is the 'Mamta Abhiyan', a single stop for preventive, promotive and basic curative care. One of the components of mamta Abhiyan is Mamta Divas. Pregnant women who participate in Mamta divas monthly check-ups receive a weight evaluation, health assessment, blood pressure check, Hb% test, urine testing, and vaccinations and supplements. Diet, immunizations, institutional delivery, and registering for government programs are all covered by counselling. (Mamta Abhiyan | Maternal Health | RMNCH + A | Programmes | NHM, n.d.)

Among the three categories of Avedis Donabedian's (Donabedian, 2005) measures of the quality of health care (structure, process, and outcomes) have historically drawn the greatest attention in the form of government surveys of health facilities and record keeping. The process components of

health care service delivery determine whether or not resources can be effectively used to provide beneficiaries with high-quality treatment or to assess the calibre of the health care delivery process.

Thus, the present study was being conducted with the objective to evaluate the utilization of maternal health services among pregnant women and identify the factors influencing their utilization. An evaluation during implementation of services will serve as a tool to advocate for ways to improve or expand processes and point out strengths and flaws. There is also the need to identify barriers in the execution of the programmes in the region. In this context, process evaluation of health and nutrition day programme (Mamta divas) was conducted in the urban health centres of Ahmedabad for assessing the effectiveness of maternal health services at community level.

### METHODS

A cross sectional study was conducted at the UHCs distributed among the seven zones of Ahmedabad, for the duration of 18 months.

There are 81 urban health centres among the 7 zones of Ahmedabad city (11 UPHC in central zone, 6 UPHC in south west zone, 7 UPHC in north west zone, 15 UPHC in west zone, 13 UPHC in east zone, 14 UPHC in north zone, 15 UPHC in south zone) (Urban Health Centers :: Ahmedabad Municipal Corporation, n.d.). In this current study, seven urban health centres, one from each of the zones were randomly selected for study.

Each of the selected seven UPHC was visited six times; two visits to the facility-based sessions and the rest four visits to different outreach sessions of Mamta divas in both slums and non-slums areas. Total 42 mamta sessions were evaluated using a preformed semi-structured Questionnaire comprising information about planning components, logistics and maternal health services.

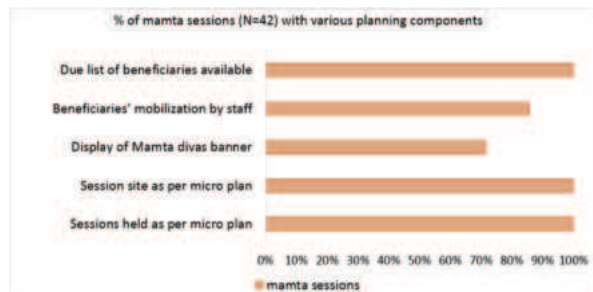
The data was then analysed for numerous variables and cross tabulation was prepared using M.S. Excel and open Epi online application. For convenience of data analysis, scoring of the variables were done. They were scored as 1 and 0 for

services provided at the mamta sessions and services not carried out at the sessions respectively.

**RESULTS**

Detailed analysis of the information collected through the direct observation of the 42 sessions of Mamta divas (facility based plus the outreach sessions) in both slum and non-slum areas of Ahmedabad was carried out.

Out of total 42 Mamta divas sessions, 100% of them were conducted in accordance with the micro plan at all the selected UHCs and in all the sessions, due list of beneficiaries was available beforehand. Mamta divas banner was displayed in 71% of the sessions visited (**Graph 1**)



**Graph 1: Planning component of Mamta Divas sessions at selected UHCs.**

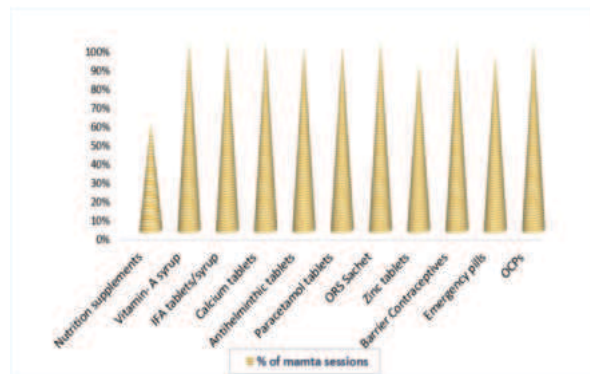
Out of 28 outreach sessions, 12 (43%) sessions were conducted at the Anganwadi centre, seven (25%) sessions held within the *chali/slums* premises, five (17.8%) in the society garden/parking and four (14.2%) in the temple premises. In 86% of mamta sessions, mobilization of beneficiaries was carried out by USHA or AWW. Many of these sessions were held at poorly constructed ill-defined areas posing difficulty for the community health workers to conduct the sessions especially during extreme weathers and also hampers the mobilization of beneficiaries.

Similarly, it was observed that nutritional supplements were

**Table 1: Maternal health service provisions during the Mamta sessions**

UPHC	Central zone	South zone	South west zone	North west	East zone	North zone	West zone
Registration of women with history taking	100%	100%	100%	100%	100%	100%	100%
BP measurement of Pregnant women	66.6%	83.3%	50%	50%	50%	33.3%	50%
Weight measurement of Pregnant women	100%	100%	100%	100%	100%	100%	100%
Height measurement of Pregnant women	33.3%	33.3%	16.6%	16.6%	Not done	Not done	Not done
Folic acid tablets provided during 1st trimester	100%	100%	100%	100%	100%	100%	100%
IFA tablets from 2nd trimester	100%	100%	100%	100%	100%	100%	100%
Side effects of IFA tablets explained	33.3%	66.6%	66.6%	33.3%	33.3%	Not done	Not done
Calcium tablets provided during second trimester	100%	100%	100%	100%	100%	100%	100%
Td injection/ booster given	100%	100%	100%	100%	100%	100%	100%
Hb estimation done	100%	100%	100%	100%	100%	100%	100%
Blood glucose measurement using glucometer	100%	100%	66.6%	50%	83.6%	50%	66.6%
Identification of High-risk pregnancy	83.3%	100%	100%	83.3%	66.6%	66.6%	66.6%
Referral services	100%	100%	100%	100%	100%	100%	100%
Follow up advise	100%	100%	100%	100%	100%	100%	100%
Counselling regarding nutrition	100%	100%	83.3%	66.6%	50%	50%	50%
Breastfeeding assessment & counselling	50%	66.6%	50%	33.3%	33.3%	Not done	Not done
Family Planning advise given	100%	100%	100%	100%	83.6%	50%	66.6%

available at the sessions only when held at the Anganwadi centres of that respective UPHC region. Zinc tablets were available at 88% of sessions while only 57% of the sessions had nutritional supplements from ICDS which were given to the beneficiaries. (**Graph 2**)

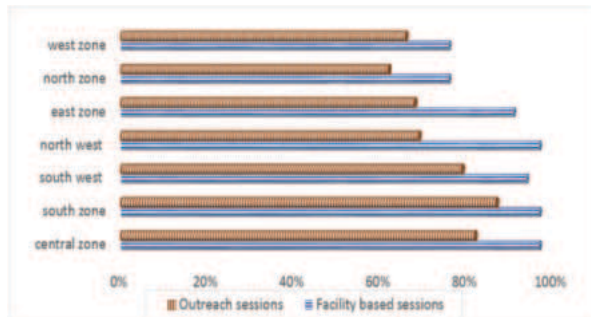


**Graph 2: Availability of essential drugs and nutritional supplements at mamta sessions**

Regarding the other logistics availability, the height scale was present in 50% of the mamta sessions. Around 38% of session sites had Hb testing kit where only one fourth had digital Hb estimation kit. BP machine with stethoscope was found at the south zone hosted mamta divas sessions while least availability (33.3%) was seen at the north zone hosted sessions.

It was discovered that important components like height and BP measurement of the pregnant women were underserved which can defer the identification of high-risk pregnancy. The side effects of IFA tablets were not told to the beneficiaries during the sessions conducted at north and west zone UPHC while it was still unsatisfactory during sessions at other UPHCs. This may adversely affect the compliance of IFA medications. Only 50% of mamta sessions hosted at east, north and west zone based UPHC, carried out nutrition-based counselling. (**Table 1**)

In comparison to facility-based sessions, significantly less services were provided during outreach sessions in terms of maternal health services. The central and south zone UPHCs organized outreach mamta divas sessions that provided 82% and 87% of maternal services, respectively. Merely 62% of maternal services were provided in outreach mamta sessions based at UPHC in the North Zone (Graph 3).



Graph 3: % of Maternal health services covered at facility and outreach mamta sessions

Table 2 depicts that after scoring the 42 mamta divas sessions held at zone wise selected UPHC for maternal and child health services, it was found that the mean score for maternal health services was maximum for south zone UPHC (15.3 ± 1.5) and minimum for north zone UPHC (11.3 ± 2).

Table 2: Score of maternal health services for Mamta Divas at every UPHC

UPHC	Central zone	South zone	South west zone	North west zone	East Zone	North Zone	West Zone
Maternal health service scores							
Mean score + SD	14.8 + 1.6	15.3 + 1.5	14.3 + 2.3	13.3 + 3	12.8 + 2.5	11.3 + 2	12 + 1.2
Median Score	15	16	15	13	13	12	12.5
Variance	2.5	2.2	5.4	7.8	6.5	3.8	1.6
Minimum	13	13	11	10	10	9	10
Maximum	17	17	17	17	16	13	13

A one-way ANOVA was performed to compare the Maternal health service scores during different mamta sessions as per seven different zones wise selected UPHC of Ahmedabad city. A statistically significant difference was found in maternal health service mean scores between the mamta sessions hosted under zone based UPHC. (df = 6, F statistics = 3.0629, p value = 0.0162).

**DISCUSSION**

Our study has concentrated on the process evaluation of "mamta divas," or health and nutrition day, one of the pillars of the Mamta Abhiyan, with respect to the maternal health care services.

Regarding the planning component, our study shows that 100% of the mamta divas sessions were conducted as per the micro-plan. The IEC banner/poster was displayed in 71% of the sessions. A study carried out in Nagpur by Banerjee et al. (Sitikantha Banerjee, Kalaiselvi Selvaraj, Kajari Bandyopadhyay, Mubashshera Firdous Khan, Tikesh Bisen, 2021) describes that only 78.5% of sessions were held as per the plan on scheduled date due to ANM unavailability. Also in this study, IEC materials were displayed in 78.5% of sessions, all of which were held at AWC. None of the banners were displayed at sessions held at settings other than AWC.

supplements, our study shows adequate availability of all except for Zinc tablets which were available at 88% of sessions while only 57% of the sessions had nutritional supplements from ICDS during sessions. A Study by Kotecha et al. (Kotecha & Singh, 2012) showed a similar finding with the only difference lying in non-availability of any contraceptives. Another study by Banerjee et al. (Sitikantha Banerjee, Kalaiselvi Selvaraj, Kajari Bandyopadhyay, Mubashshera Firdous Khan, Tikesh Bisen, 2021) highlighted the complete non availability of IFA tablets/syrup, Zinc and calcium tablets along with absence of any contraceptives.

Regarding the availability of other logistics, it was found in our study that the height scale and infantometer was present in half of the sessions under central and south zone while in 33.3% of sessions under the rest of the UPHC. Banerjee et al. (Sitikantha Banerjee, Kalaiselvi Selvaraj, Kajari Bandyopadhyay, Mubashshera Firdous Khan, Tikesh Bisen, 2021) depicted a similar picture with the complete absence of stethoscope and BP machine while height measurement scale was present in 71.4% sessions. However, a contrasting observation was made in a study conducted in urban slums of Berhampur (Tripathy et al., 2017) where BP instrument and stethoscope were available at all mamta sessions.

In our study 38% of all mamta session sites had Hb testing kit. Similar findings was seen by Saxena et al. (Saxena et al., 2015) in Uttarakhand while it was completely absent in mamta sessions at urban slums of Bhavnagar (Kotecha & Singh, 2012) However, a study by Tripathy RM et al. (Tripathy et al., 2017) in Odisha showed availability of Hb testing kit in 66.6% of sessions.

Observations during mamta divas sessions revealed thorough registration of antenatal mothers, including history taking and weight measurement. Across all sessions, expectant mothers received folic acid tablets in the first trimester, IFA and calcium tablets in the second and third trimesters, along with Td vaccine doses. However, studies in different regions showed variations in coverage: Gandhi et al. (11) found high rates of weight measurement and IFA dispensing, while other areas like western Gujarat (12) and urban Nagpur (7) reported lower rates of essential interventions like folic acid distribution and Td immunization.

However, underserved antenatal services in our study included components like height and BP measurement of the pregnant women, being done in only 14.2% and 57.1% respectively of the total mamta sessions. Also, though IFA tablets were provided to the ANC but in 14.2% of session sites they were given the under-dosage IFA kit (pink strip for children aged 6 to 9 years were provided). Study in Surat showed that BP monitoring was done at 65.5% of sessions while in Bhavnagar it was in 90% of sites. (Gandhi et al., 2016) Haemoglobin estimation and RBS determination was done as a part of routine ANC investigations (carried out at the UPHC lab). In 25% of session sites Hb estimation was conducted on spot. In just 33.3% of all sessions, antenatal women were explained about the side effects of IFA tablets which can affect their drug compliance. Saxena et al. (Vartika Saxena, 2015) depicted Hb estimation in 29.2% of sessions against a study by Patel BH et al. (Bharatkumar H. Patel & Dr. Monark Jitendra Vyas, n.d.) where it was at 42% of sessions.

High risk pregnancy identification is an important part of antenatal services which helps in early identification of any risk during pregnancy and allows early referral and prompt management. In our study, it was carried out in 80.9% of all the mamta sessions whereas in a study by Mehta et al. (Mehta et al., 2017) identification of high-risk antenatal women was 23.5%.

With regard to the availability of drugs & nutritional

Counselling of the antenatal woman forms an important

component of the services. The counselling offered at the sessions mainly by the ANM covered general dietary advice, reminder on follow up visits, importance of institutional deliveries and family planning advice. In our study, counselling regarding nutrition and family planning to beneficiaries was provided at 71.4% and 85.7% of the sessions respectively. Mehta et al.(Mehta et al., 2017) reported adequate and relevant counselling at 82.4% session sites but study by Rajkumari et al.(Rajkumari HK et al., 2012) reported lack of these detailed counselling services.

## CONCLUSION

The Mamta Divas, a Health and Nutrition Day initiative, offers various health care services to communities, focusing on maternal well-being. Our study assessed maternal health services during urban health and nutrition days (UHNDs), noting consistent delivery by Urban Primary Health Centres (UPHCs) but highlighting challenges like inadequate infrastructure. Services provided included registration, weighing, and administering essential supplements like Td, IFA, and calcium tablets. However, shortcomings such as lack of height and blood pressure measurements hindered early identification of high-risk pregnancies. Furthermore, inadequate explanations of IFA tablet side effects could affect drug compliance among antenatal and postnatal mothers, suggesting the need for improvements in service delivery and communication.

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