

Original article

STATUS OF THE COMMUNITY BASED MONITORING AT SUB CENTERS IN MAHARASHTRA

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ABSTRACT

Introduction: The system of Community Based Monitoring (CBM) was implemented as a project in five districts of the State of Maharashtra. In each district three blocks and in each block 3 Primary Health Centers were included.**Objectives:** We conducted the study to assess the implementation process and effects of the implementation after three years of execution.**Material and Methods:** The study was carried out with the help of Community Medicine Departments from nearby Medical Colleges. First we selected 45 sub centers from the project implementing areas and equal numbers were selected for comparison from three blocks from Non-CBM implementing area.**Results:** Only 44.44% ANMs were trained in CBM process. We did not find any difference between the CBM and Non-CBM group of sub centers in the assessment of sub centers, ANMs, services provided and expenditure incurred. Difference was observed in displaying of village wise health days calendar and registration of ante natal women.**Conclusions:** Small proportion of ANM had undergone the training and secondly the duration of the training was not uniform. This may be the reason for lack of difference in the two groups.**Key words:** National Rural Health Mission, Monitoring, Sub centers.

INTRODUCTION

In order to improve community participation in health care delivery, the National Rural Health Mission (NRHM) introduced concept of Community Based Monitoring (CBM) on large scale in India by initiating a pilot project in the year 2007-2008. In the State of Maharashtra in the first phase of the project five districts were included. The Community Based Monitoring of health services is one of the key strategies incorporated in the implementation plan of NRHM. Non-Governmental Agencies (NGOs) at various levels implement this project of monitoring of health services. The NGOs are expected to establish monitoring committees at various levels and train the health personnel along with members

of the committees in CBM process¹. The CBM process is anticipated to boost functioning of the Village Health Sanitation and Nutrition Committees (VHSNCs) which have been established in almost all the villages (91.31%) in the State². ANM is one of the members of VHSNC. CBM is also expected to accelerate other activities of NRHM. Under NRHM each sub center is allotted an amount of Rs. 10,000 per year as Un Tied Fund (UTF). Additionally Rs.10,000 per year Annual Maintenance Grant (AMG) is also sanctioned towards maintenance of the building. There are some guidelines about utilization of the fund. We decided to study implementation of the Community Based Monitoring at the village, sub center and primary health center level.

Sub center level was included because it is the most peripheral institution which caters health services in the country and their number is highest among public sector institutions. Changes in the functioning of sub centers will immediately reflect in the health status of the population. This article is a comparative study of sub centers. We conducted this study while working at the State Health Systems Resource Centre (SHSRC) under the National Rural Health Mission in Maharashtra. The objective was to study the implementation and effect if any of the CBM at sub center level.

MATERIAL AND METHODS

Maharashtra is the third largest state by area next to Rajasthan and Madhya Pradesh and second largest by population next to Uttar Pradesh in India. As per details from Census 2011 Maharashtra has population of 112.4 million. In the state of Maharashtra there are 43,722 villages which receive health services through 10,580 sub centers. Mostly the head quarter village of sub center is the largest among 4 to 5 villages it serves. Although it covers about 25% villages the population covered is certainly far more than 25%. The CBM was implemented as a pilot project in five districts of Maharashtra namely: Amravati, Nandurbar, Osmanabad, Pune and Thane from 2007-08. In each district nine Primary Health Centers (3 each from 3 selected blocks) were included under the pilot project. Thus, a total 45 PHCs were included in CBM in Maharashtra and the scheme was implemented as per guidelines issued by Government of India^{3,4}. In 2009-2010, the Community Based Monitoring had completed three years of implementation in the State of Maharashtra. Up-gradation of the project was under consideration. Our study was hence initiated and actually conducted in year 2010-11. We wanted to study CBM process in phase wise manner. In our study we first selected one village from each PHC in CBM project. The selection of the village in each PHC was done by arranging the list of villages in the PHC alphabetically and numbering them. Then one village per PHC was selected randomly using Open-Epi software. Considering the correlation between the health care system of a village and receipt of services from the sub center, we decided that sub center of the selected village as the automatic choice for the study. In some instances, the selected village itself happened to be the headquarters of the sub center. These 45 sub

centers constituted our study group. The blocks in which CBM was not implemented were considered for control. Selection of three blocks (from each district), 3 PHCs from the selected block and a village from each selected PHCs was done randomly i.e. by making alphabetical list, numbering and then selecting by use of Open-Epi. The concerned 45 sub centers to the selected 45 villages constituted the control group. Thus, in each district 9 sub centers from CBM implementing group of PHCs and 9 from Non-CBM group of PHCs were selected. Information from the sub centers was obtained by a team from the medical college in / nearby district. (For Pune district the information was collected by the authors). Each team consisted of a post graduate degree holder teacher from the department of Community Medicine and a student pursuing post-graduation in the department. The information was collected through structured interview and verification of information by visit to the sub center village at least two times. The contents of the interview and questionnaire were finalized in the meeting of the faculty of participating medical colleges. The post graduate students participating in the study were given prior training by the senior teacher who attended the meeting. Prior information of visit to the sub center was given to the concerned medical officer of PHC and Auxiliary Nurse Midwife (ANM). Following activities/ items (that are conducted both at CBM / Non-CBM sub centers) were studied at sub-center;

1. Display of citizen's charter, calendar of activities, services available,
2. Availability of some basic amenities like storage of drinking water, facility for delivery etc.
3. Utilization of UTF and AMG of sub center,
4. Participation and knowledge of ANM about village health plan,
5. Knowledge of ANM about procedures related to VHSNC of sub center village,
6. Provision of free referral to needy mothers/ children.

We developed two summary techniques using the information obtained after visiting sub-centers and conducting interviews of the ANMs. Based on the information collected, we established one scoring system for sub center and another for ANM. The details of scoring system are given in annexure -1 and annexure -2. Maximum score attainable was 35 for the sub center and 10 for the ANM. Many sub centers in both categories did not maintain separate accounts of UTF and AMG. We considered combined total

amount received during the three year period for the analysis. It was thus an observational study using a comparison group. All the information was entered in Microsoft Excel 2010 and analyzed with 't', 'standard error of difference between proportions' and ' χ^2 ' tests.

RESULTS

After interviewing all the ANMs of selected 90 sub-centers, it was realized that only 19 (42.22%) from CBM and one (2.22%) from Non-CBM ANMs received the CBM training. Based on the observations made by the team during the visit to the sub centers, marks were given to the sub centers. The mean marks for CBM group of sub centers were 16.75 and Non-CBM group 16.91 ($t=1.47$; $P=0.88$).

Table 1: Number of sub centers displaying details of services

Particulars	Category		Z value	P value
	CBM (n=45)	Non-CBM (n=45)		
Citizen's Charter	7 (15.56)	8 (17.78)	0.28	0.777
List of Services Available	19 (42.22)	14 (31.11)	1.10	0.271
Village wise Health Days	29 (64.44)	17 (37.78)	2.65	0.008

Figures in parenthesis indicate percentage

The status remained similar even if the sub centers were compared according to the training status of the ANMs. For sub centers having trained ANM the mean score was 17.20 and for sub centers having untrained ANM, the score was 16.72 ($t=0.369$; $P=0.71$). The results of assessment of ANMs in identified 10 core areas showed that the mean marks for ANMs from CBM group were 7.15 and Non-CBM group 6.97 ($t=0.48$; $P=0.64$). Segregated analysis showed that trained ANM had mean score of 6.95 and untrained ANM had 7.10 ($t=0.33$; $P=0.74$). In some of the centers the minutes of the meeting of Village Health Sanitation Nutrition Committee (VHSNC) were kept on loose papers. Some of the sub centers old minutes were not signed. This was seen in both categories. Following observations were also noted pertaining to the CBM training received by the ANMs.

1. A large number 26 (57.78%) out of 45 ANMs from CBM sub-centers told that they did not

receive training. (One ANM from Non-CBM category had received training)

2. The duration of training, as told by the ANMs, varied from 1-5 days.
3. Out of 20 ANMs who had received CBM training 8 said that "the training has helped them greatly" while 3 said that "the training had absolutely no help". Remaining 9 ANMs said that "it helped somewhat".
4. Based on the interviews of ANMs we identified following aspects which need emphasis in the training in that order.
 - Displaying of Citizen's charter, services available and calendar of activities of villages under the sub-center
 - Accounting of Untied Tied Fund (UTF) and Annual Maintenance Grant (AMG) and its utilization.
 - Organization and record keeping of the activities of VHSNC.
 - Role of ANM in preparation of village health plan.
 - Possible innovations in utilization of UTF
5. When asked about suggestions for improvement in CBM training following important suggestions in following order were made by the ANMs
 - Refresher training at periodic interval.
 - Explanation of criteria for "Red", "Yellow" and "Green" facility reports in evaluation of PHCs.
 - Participation of ANMs during the training of Gram-Panchayat members.
 - Incentive for ANMs trained in CBM and who in CBM show good performance.
 - Inclusion of account maintenance (of UTF and AMG) in the training.
 - Stress on preparation of village health plan.

As per guidelines of CBM, each sub center is supposed to display information about some services at a prominent place. Table-1 shows the data related to display of three important services. For only displaying village wise health days, the difference in the proportion of sub centers in the two groups is statistically significant ($\chi^2=5.38$, D.F. =1, $P=0.0204$). In many sub centers separate accounts for UTF and AMG were not maintained. It is seen from the data in Table-2 that the Non-CBM sub centers utilized slightly higher proportion of the grants received as compared to the CBM sub centers, however the difference was not significant ($Z=0.67$; $P=0.501$). It

may be noted that the difference in the average grants received by the two groups of sub centers is too marginal to apply any statistical test. In the CBM group 12,403 and in Non-CBM 12,557 ante natal women were registered in the three year period. The performance was 109.7% and 105.5% of expected level of achievement in CBM group and Non-CBM group respectively ($\chi^2=4.77$, D.F. =1, $P=0.029$). Registration of ante natal women was better in CBM group. However both the groups registered more women than the expected level of achievement.

Table-3 shows the utilization of sub center building for delivery. It is seen that the proportion of ANCs registered delivered in sub center building

is 11.09 and 12.69% respectively in the CBM and Non-CBM sub centers. The difference in proportion in Non-CBM centers is statistically not significant ($Z=0.23$; $P=0.818$).

Table-4 shows the proportion of mothers/ children referred to higher centers given free transport facility. It seems that the CBM centers has provided this facility to proportionately higher number of mothers/ children than the Non-CBM centers but the difference is statistically not significant ($\chi^2=0.009$, D.F. =1, $P=0.9235$). It was also observed that in both the groups the proportion of providing transport to referred children was higher than providing transport to mothers ($\chi^2=390$, D.F. =1, $P<0.001$).

Table 2: Utilization of grants (UTF and AMG) in 2007-10

Category	CBM	Non-CBM	Total
Grant Received	1952233	1994828	3947061
Grant Utilized	569858	708778	1278636
% Utilization*	29.1	35.5	32.3
Average Grant Received Per Year	14460.9	14776.5	14618.7

* $Z=0.67$; $P=0.501$

Table 3: Deliveries in sub-center buildings in 2007-2010

Category	CBM	Non-CBM	Total
ANCs Registered	12403	12557	24960
Deliveries conducted in sub center building	1376	1594	2970
% deliveries in subcenter buildings out of ANCs registered	11.09	12.69	11.89

$Z=0.23$; $P=0.818$

Table 4: Comparison of Referral Services Provided By the Sub-centers during 2009-10

	CBM	Non-CBM	Total	Chisquare, P value
Mothers Referred To Higher Center	347	321	668	
Mothers Given Free Transport (%*)	31 (8.9)	28 (8.7)	59 (8.8)	$\chi^2 = 0.009$; $P = 0.924$
Children Referred To Higher Center	282	141	423	
Children Given Free Transport (%*)	190 (67.3)	87 (61.7)	277 (65.4)	$\chi^2 = 1.1$; $P = 0.294$

* Percentage are out of referred

DISCUSSION

We prepared a tool for assessing the overall status of a sub center with emphasis on CBM process. The tool was made comprehensive by including all the vital points and also tagged appropriate weightage to the points. The objective was to have a sensitive and simple tool to detect even slight effect. One easily available tool for assessment of sub centers is disseminated by the Government of India which is developed for accreditation of institutions under Indian Public Health Standards⁵. Our tool was quite different and simpler. Assessment of sub centers by this tool did not find any difference in the CBM and

Non-CBM group. Similarly for assessing the knowledge, attitude and practices of ANMs another tool was prepared. This tool had VHSNC and its functions as core area. Performance of ANMs did not differ in two groups. Even there was no difference in KAP of trained and untrained ANMs. Although ANM is key person in VHSNC, she took the VHSNC meetings very casually. At many places, they filed loose papers of the meetings after our visits. The minutes are supposed to be kept in registers the page numbers of which are certified by the chairman. The village that is HQ of sub-center gets Rs 10,000 as UTF like any other village and its account is to be maintained by Anganwadi

worker. At some of the sub-centers there was a problem in differentiating the sub center UTF and village UTF which lead to accounting lapses. In spite of three years of implementation, in general ANMs were scared of keeping records of financial matters in UTF and AMG and this scare was largely due to lack of training. The State Nodal Agency for CBM has published a report on the implementation of the CBM project². This report focuses on the implementation and effect of CBM in villages and PHCs. Our study focuses on the effect of CBM at sub center level. The CBM pilot project was initiated in 5 villages each of the selected PHCs. The CBM activities are not expected to show an effect on impact indicators like mortality in short duration of three years. However, they were expected to show detectable improvement in process indicators (like displaying of information of services available, utilization of grants) and service delivery indicators (like ANC registration, institutional deliveries) at sub center of the villages selected. It seems that performance of the CBM category of sub-centers in registration of pregnant women is slightly better than the Non-CBM category. However, achievement more than Expected Level of Achievement in both the categories raises question on the setting of the level of ELA. Barring the exception of displaying of information about village wise health days there was no significant difference in the activities of the two groups. Similarly all the services provided (excepting registration of ANC) like deliveries conducted in sub center building, provision of free referral services to mothers/ children did not differ significantly. The overall provision of better transport services in referring children can only be explained by preciousness of children in era of acceptance of small family norm. Total Fertility Rate of Maharashtra State is 1.8 as per Sample Registration System report 2011⁶.

CONCLUSIONS

The change is initiated by CBM process was observed in displaying of village wise health days and fundamental service of registration of pregnant women. It seems that the high proportion of ANMs remaining untrained in the CBM category of sub center (only 20 were trained out of 45 i.e. 44.44%) appears to be one of the reasons of absence of more differences in the two groups. Secondly, there was lack of uniformity in the training across the state. This is indicated by the

variable duration of the training of the ANMs trained. The suggestions indicated by the ANMs were really useful for improving the process of CBM. There was a fair degree of dis-satisfaction among the trained ANMs regarding the training. The state nodal implementing Non-Government Organization did not concentrate on sub centers and hence there is no difference in the two categories.

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Annexure 1: Scheme of marking of sub-centers

Item	Marking System	Max.
Rating of the building of the sub-center	Poor=1, Average=2, Good=3, Excellent=4, Non-existent=0	4
Clinic Room	Poor=1, Average=2, Good=3, Excellent=4, Non-existent=0	4
Delivery Room	Poor=1, Average=2, Good=3, Excellent=4, Non-existent=0	4
Drinking water storage	Poor=1, Average=2, Good=3, Excellent=4, Non-existent=0	4
Biomedical waste pit	Poor=1, Average=2, Good=3, Excellent=4, Non-existent=0	4
Citizen's charter	Displayed=1, Not Displayed = 0	1
List of services available	Displayed=1, Not Displayed = 0	1
Sub-center health calendar	Displayed=1, Not Displayed = 0	1
Percent utilization of grants in three year UTF and AMG	0% = 0, < 20= 1, < 40 = 2, < 60 = 3, < 80=4, Else: 5	5
Deliveries conducted in sub-center building	0 =0, <41=1, <81=2, <121=3, < 161=4, Else:5	5
Mothers given financial assistance for referral	Y =1, N =0	1
Children given financial assistance for referral	Y =1, No =0	1
Total Maximum Score		35

Annexure 2: Scheme of marking to ANMs of sub-centers

Question	Yes	No
Is the ANM aware about Village Health Plan (VHP)	1	0
Does she enumerates and tells at least one item in VHP of 2010-11	1	0
Is she aware about village health calendar? (VHC)	1	0
Does she tell correctly where VHC should be displayed?	1	0
Does she tell correct frequency of the meetings of VHSNC?	1	0
Does she recall and tell at least one issue rose in latest VHSNC?	1	0
Is she aware about Untied Fund (UTF)?	1	0
Does she tell correct amount of UTF for a village?	1	0
Does she tell at least two items for which UTF can be utilized?	1	0
Does she tell at least one innovation that can be / is done through UTF?	1	0
Total (maximum)	10	