

Perspectives and Challenges of HMIS Officials in the Implementation of Health Management Information System (HMIS) with Reference to Maternal Health Services in Assam

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ABSTRACT

Introduction: Health Management Information System (HMIS) is one of the important components of National Rural Health Mission (NRHM). The web portal of HMIS was launched by the Ministry of Health and Family Welfare (MOHFW), Govt. of India (GOI) in 21st Oct. 2008 to enable capturing of public health data from both public and private institutions in rural and urban areas across the country.

Aim: The aim of the study was to assess the quality perspectives and challenges among HMIS officials in implementing HMIS at their respective levels, i.e. district and block level.

Materials and Methods: We conducted a pilot qualitative study in two districts of Assam. HMIS officials working at district and block level were interviewed in-depth with the help of a semi-

structured interview schedule which lasted from May to July 2014.

Results: Both HMIS and MCTS (Mother and Child Tracking System) formats were considered useful, by the HMIS officials, for data collection, planning at various levels, tracking maternal and neonatal deaths, institutional deliveries. HMIS officials reported that MCTS is useful for monitoring individual health status especially the status of the mother and child and HMIS being helpful as a health facility monitoring tool.

Conclusion: The study used a small sample size, hence similar type of studies are required with large sample size to understand the perspectives and challenges of HMIS officials in the implementation of HMIS.

Keywords: Anemia, Antenatal care, High risk pregnancy, Mother and child tracking system

INTRODUCTION

The National Rural Health Mission was launched by Govt. of India with an impetus to bring an architectural correction in the existing health system in India. It brought several of core and supplementary strategies to meet its goal. HMIS is one of such component which was primarily designed to capture public health data from both public and private institutions in rural and urban areas across the country. It was launched by the Ministry of Health and Family Welfare (MOHFW) in 21st Oct. 2008. The portal was envisaged as a "Single Window" for all public health data for the MOHFW. The MOHFW initially rolled out the HMIS up to the District Level and now being expanded to the Sub District/Block level facility wise data entry. Over 630 Districts are reporting their monthly performance on a regular basis. The basic objective of HMIS is to enable data entry at different facility level, to enable users to preview, compare, modify and forward to next upper level. The data stored can be used for statistical analysis and ad-hoc reporting purpose, to consolidate data entered at each facility which can be stored at a central database [1]. Having mentioned that, it has been 6 years now since the portal has been launched and the same is being implemented at different levels in different states across the country by designated HMIS officials.

AIM

The aim of the study was to assess the quality perspectives and challenges among HMIS officials in implementing HMIS at their respective levels, i.e. district and block level.

MATERIALS AND METHODS

We carried out a pilot qualitative study in the state of Assam. HMIS officials working at district and block level were interviewed in-depth.

Total interviews carried out were 5 that include 2 district and 3 block level HMIS officials. All the interviews were conducted with the help of a semi-structured interview schedule during May-July 2014. The interviews were conducted in the respective health facilities. From each such center, the HMIS officials were interviewed and the session was audio-recorded. Also, the staff associated with HMIS/MCTS were approached, for other additional information. During the interview, a semi structured questionnaire was used which was filled up by the researcher (Appendix 1). The information was compiled and assessed using Microsoft excel.

RESULTS

We asked four questions to assess the perspectives in relation to HMIS. These questions were primarily directed to capture their perceptions regarding the (1) importance/significance of HMIS in maternal health, (2) current arrangements for initiating quality, (3) how does the present HMIS (Health management information system)/MCTS (Mother and child tracking system) aims to achieve quality, desirable quality benchmarks in an ideal HMIS and (4) room for further improvement. HMIS officials reported several performance indicators in relation to maternal health services as elicited from MHIS and MCTS [Table/Fig-1]. Similarly the [Table/Fig-2] describes various challenges encountered by the HMIS officials while implementing HMIS/MCTS in relation to maternal health services.

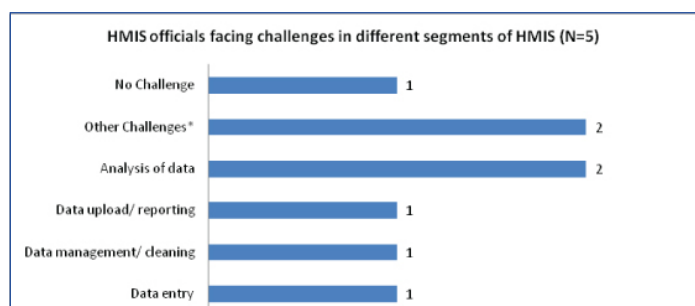
DISCUSSION

The discussion section in this article is delineated in two separate headings; perspectives and challenges. The "perspective" section is further divided into two subsections; usefulness/advantages and scope for improvement.

Perspectives of HMIS officials: Usefulness/Advantages: Both HMIS and MCTS formats were considered useful, by the HMIS officials, for data collection, planning at various levels, tracking maternal and neonatal deaths, institutional deliveries. HMIS officials reported that MCTS is useful for monitoring individual health status especially the status of the mother and child and HMIS being helpful as a health facility monitoring tool. Remedial measures can be taken according to the data collected through these formats. In addition, these two formats act as monitoring and dissemination tool of the local information at central level. They considered the capacity

Indicators	Yes (n=5)*	Fr.	No (n=5)*	Fr.	Comment, if any
Poor outcomes of MCH	Yes	5			It shows ANC registration, maternal death, infant death, Hb gm%, malnutrition and severe anaemia
Poorly performing facilities	Yes	5			One respondent named a poor performing PHC
Clinical errors	Yes	4	No	1	Mismatch between LMP and EDD
Specific disease burden/ prevalent co-morbidities etc.	Yes	5			Anaemia and high risk pregnancy

[Table/Fig-1]: Performance indicators captured in HMIS and MCTS. * These questions are not asked to State MIS manager and State nodal M & E Officer



[Table/Fig-2]: HMIS officials facing challenges in different segments of implementing Health Management Information System. * Internet connectivity, System failure.

of HMIS/ MCTS positively to inform poor outcomes of Maternal and Child Health (MCH) indicators; such as infant and maternal death, home and institutional deliveries, anemia (percentage of hemoglobin), poor performing facilities and/ or health staff (they named a couple of PHCs). They reported examples of clinical errors that can be obtained from MCTS; such as mis-match of LMP (Last menstrual period)-EDD (Expected date of delivery) or actual date of birth of the child [Table/Fig-1].

Scope for Improvement: HMIS officials failed to articulate the current arrangements for initialing quality and the aim of HMIS to achieve the same. Timely, accurate, error free reporting and uploading of data and capacity to detect errors were considered as the quality benchmarks of an ideal HMIS by all the respondents. Furthermore completeness, timeliness, accuracy, detection of data and systematic errors were delineated as the quality benchmarks by the HMIS training manual prepared by NRHM [2]. Incorporation of a database management system in to the existing HMIS and linking of systems were perceived as the necessary steps to improve it further. In addition, Panjamapirom & Musa mentioned that HMIS is not merely an artefact and needs to be culturally sensitive to produce optimal result [3]. Mahapatra and Kumar (2009) in their study in Odisha suggested better accommodation of need of various tribal groups while designing the HMIS for collecting data relating to maternal health [4].

Challenges faced by HMIS officials

We asked two major questions in relation to challenges faced in data entry, upload, analysis and management. We also enquired about the challenges in relation to multiple systems of data collection such as MCTS, central HMIS and state HMIS. The challenges reported

by HMIS officials were pertinent to all areas but the main challenge was in the area of data analysis which is probably due to inadequate training in data analysis techniques.

The challenges elicited in our interview indicate that some of these are related to local issues and others are related to system and policy issues. Wrong data entry at field level by field health workers needs continuous training and orientation. Similarly challenges in data analysis could be addressed by arranging training on data analysis techniques which is very much important as mere entry, upload, management and reporting has no meaning unless it gets analyzed at each level. Analysis of data is an important component in decision making cycle hence analysis of data can help in framing decisions at each level. Again decision making at each level can prevent public health menaces such as detection of anemic pregnant women from MCTS can save impending maternal deaths and serious maternal health complications. Officials also suggested linking of systems and incorporation of data management information systems that requires system and policy level intervention as the same cannot be addressed at local level. Mavalankar et al., also found in their study that quality health care and policy making for maternal health would be severely affected if the HMIS is not managed properly. Further, it has a strong bearing in the achievement of MDG [5]. Ramani et al., also observed similar challenges in the management of data in government hospitals of Gujarat. They found that proper analysis of data does not happen at ground level to be used for decision making [6].

We were able to capture perspectives and challenges of HMIS officials to a satisfied level which revealed that HMIS officials are aware of the significance of HMIS/MCTS however they could not properly articulate the current arrangements for initiating quality and the aim of HMIS to achieve the same. Similarly HMIS officials raised several challenges which requires local as well as policy level interventions.

CONCLUSION

The present study delineates the perspectives and challenges of HMIS officials in the implementation of health management information system in relation to maternal health services. The study is a pilot one with limited sample size. We believe bigger studies with large samples could unfold these issues in detail.

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A) ABOUT THE RESPONDENT

1. Can you tell us something about yourself and your educational background?

a. Age

b. Education

c. No of days in a month that she/he works?

d. No. of years of working as a nurse

e. Years of posting at this particular health facility-

f. Work hours-

g. Do you work in night shifts?

2. What are your present role and responsibilities?

B) INFORMATION ABOUT PRESENT HMIS/ MCTS

3. Can you briefly explain the present HMIS/ MCTS at your health facility?

a. Data collection- By whom? In what format?

a. Data entry- By whom? In what format?

b. Please explain about various MCH related information that you

manage with your HMIS and /or MCTS system?

c. How is this information used further?

d. How do you report the data that you manage?

e. Does your HMIS/MCTS have any special feature related to MCH/ RCH data?

C) HIS RELATED ACTION PLAN, INTERACTION AND FEEDBACK

4. Does the HMIS inform on the following points?

Indicators	Yes/ No	Comment, if any
Poor outcomes of MCH		
Poorly performing facilities		
Clinical errors		
Specific disease burden/ prevalent co-morbidities etc.		
Any other (Please specify)		

5. How does the collected data get translated into doable action plans? Please give examples.

6. What are the common errors/ problems, processes/ initiatives to minimize the errors and challenges faced in the data collection, data entry, data upload and data analysis? (Probe for each level)

Stages of data	Type of errors/ problems	Process/ initiative to minimize the error	Challenges
Data collection			
Data entry			
Data upload			

7. Can you describe a typical interaction you have with various health personnel related to data entry, upload, management or analysis?

Persons with whom he interacts	Purpose of interaction/ subjects discussed/ agenda 1. Data entry 2. Data upload 3. Data management 4. Data analysis 5. Errors/Gaps 6. Any other (specify)	Frequency of interaction	Any need to improvise this further/ gaps experienced, if any
ANM			
Doctor			
Block/ District Programme manager			
State level personnel (Specify)			
Any other (Please specify)			

D) ABOUT TRAINING AND MONITORING FOR HMIS

8. Details of trainings received

Previous training			On-going/ continuous training		
Subject	When	Duration	Subject	Duration	Frequency

9. How is your work monitored?

10. Do you see a need for opportunities for further capacity building and educational advancements? (Personal level)? (If yes, please describe.)

E) PERSPECTIVES

11. According to you what is the importance/ significance of HMIS/ MCTS for maternal health care?

12. What are the current arrangements for making the HMIS/ MCTS better? How do the present HMIS/ MCTS aim to achieve quality?

13. What are the desirable quality-benchmarks for the best HIS? (Initially try to seek spontaneous answer and then probe with the options)

Spontaneous response

14. Do you feel that the work that you do has any benefit for the health system/ MCH/ RCH? Please explain it.

F) CHALLENGES

15. According to you what is the most challenging activity for you?

Spontaneous answer

Probe options-

- Data entry
- Data management/ cleaning
- Data upload/ reporting
- Analysis of data
- Communication with ANM or others
- Any other (Please specify)

16. Do you see any challenges with regard to multiple systems of data collection for e.g. MCTS, central HMIS, state HMIS etc.? Can you please elaborate this?

17. We talked about several issues related to the maternal health services, trainings, quality, guidelines etc. Do you wish to add anything more to what I asked you or whatever you have answered so far?

Additional remarks/ comments

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