

Original Research Article

Health Management Information System Data Quality under NRHM in District Sonapat, Haryana

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ABSTRACT

Good health information system is crucial for addressing health issues and improving quality of health care delivery in developing countries. In India the health care system's data being managed by a system called Health Management Information System (HMIS). Using quality and accurate data the managers can properly plan for the improvement of health of the community. The present study was planned with the objective to assess the HMIS data quality at the different levels of health care delivery systems in district Sonapat, Haryana. All the 7 CHC included 2 PHC from each CHC i.e. 14 PHC and two Sub-Centers from each PHC i.e. 28 Sub Centers were selected from the district. A pre-designed semi-structured questionnaire was used to collect the data from April 2014 to June 2014. Each questionnaire was scored for assessment. Less than 2/3rd of the PHCs & CHCs and only half of the SCs had average data quality. In rest of the health facilities the report quality was poor. The data quality related to maternal and newborn health care services was even worse i.e. poor in all of the CHCs and poor in more than 4/5th of the PHCs and SCs. All the workers were briefed about the important points which they did not know or the knowledge was incorrect. A session was conducted for the mid and higher level health managers for planning and conducting of supportive supervision. A second visit to all the health care facilities to assess the data quality showed a significant improvement.

Keywords: Health Management Information System (HMIS), NRHM, Data quality, Sonapat, Haryana.

INTRODUCTION

Good health information system is crucial for addressing health issues and improving quality of health care delivery in developing countries. [1] Although there has been increasing international concern to develop robust health information system, but it has been a difficult task due to various reasons. [2-5]

In India the health information is generated from the grass root level of the health system i.e. Sub-center up to the

tertiary care institutions. The basic planning for the health care delivery depends much upon the data generated at the primary and secondary level of the health facilities i.e. Sub-Centers, PHCs and CHCs. These data are being managed through a system called Health Management Information System (HMIS).

HMIS performance and quality of the data generated depend on individual's knowledge, skills, motivation and other factors like commitment, supervision and

availability of resources etc. [6] Previously some studies, in India, observed major gaps in HMIS performance. [7] Data quality and data usage are interrelated, poor quality of data are useless and should not be used. Improving the quality of data will in turn lead to more data usage and will significantly help in effective decision making. A good Public Health Manager seeks for correct information for proper health planning; using quality and accurate data she/he can properly plan for the improvement of health of the community.

Keeping in view above facts the present study was planned with the objective to assess the HMIS data quality at the different levels of health care delivery systems i.e. Sub-Centers, Primary Health Centers (PHCs) and Community Health Centers (CHCs), in district Sonapat, Haryana.

METHODOLOGY

Study area: The study was conducted in Sub-Centers, PHCs and CHCs of District Sonapat, Haryana. There are 7 CHCs, 28 PHCs & 161 Sub-Centers in district Sonapat. For the study purpose all the 7 CHC included, two PHC from each CHC i.e. 14 PHC and two Sub-Centers from each PHC i.e. 28 Sub Centers were selected. PHCs and Sub-centers were selected by random sampling technique using lottery method. Study population comprised of - Multipurpose Health Worker Males (MPHW M), Multipurpose Health Worker Females (MPHW F), Information Assistants (IA), Medical Officers (MO) and Senior Medical Officers (SMO) of the respective centers

Data collection: The researchers made at least two visits to each of the selected 7 CHCs, 14 PHCs & 28 Sub-Centers. Information to SMOs, MOs, MPHWs and IAs of the concerned facility was sent in advance (2-3 days prior) explaining the purpose and the time of the visit. A pre-designed semi-structured questionnaire was used to collect the data from April 2014 to June 2014. The questionnaire consisted of

two parts. One part was for assessing the quality of the data generated at the facilities and other part was to assess the knowledge of the workers regarding the maternal and new born health care components which are related to the HIMS data. They were asked to make all the HMIS records available on the day of visit at the concerned facility. The data quality was assessed on the basis of completeness, correctness and timely submission to the system. Each of the components was given equal weight age for scoring. The data quality was assessed and verified in the presence of SMOs, MOs, MPHWMs, MPHWFs and IAs, who so ever were responsible at the concerned facility. Questionnaires were scored and all the institutions or participants were categorized as follows, <50% score poor, 51%-79% average and $\geq 80\%$ score was considered good for the quality of the data generated or their knowledge regarding the components of data being generated.. Subsequently, each of the concerned staff at the facility was interviewed in detail to find out the issues faced by them regarding data collection, compilation and submission. They were asked about their previous trainings attended related to HMIS and were briefed about the issues concerned to their knowledge at that very time. The issues related to the MOs/SMOs were also addressed at a meeting conducted for the supervisors. At the end, a briefing was made, regarding the importance of quality of data.

A second visit was done after a month. The quality of data related to HMIS formats was assessed again. The scoring was done again and the scores were compared statistically by applying chi-square and paired t tests as required.

It was a sanctioned project and the sanction was accorded by the office of MD, NHM Haryana.

RESULTS

After the first visit to different selected health facilities to assess the quality of reports, we found that none of the health

facility had scored corresponding to good quality of data. Less than 2/3rd of the PHCs & CHCs and only half of the SCs had average data quality. In rest of the health facilities the report quality was poor (Table 1).

The data quality related to maternal and newborn health care services was even worse i.e. poor in all of the CHCs and poor in more than 4/5th of the PHCs and SCs (Table 2).

All the MPHWs had attended one session of training regarding HMIS. The key issues identified for the poor data quality were - lack of guidance, support & supervision by the supervisors and lack of knowledge of MPHWs and MOs/SMOS regarding various key areas. All the workers were briefed about the important points which they did not know or the knowledge

was incorrect. For addressing the issue of lack of guidance, support and supervision we had conducted a one day sensitization session for all the supervisors of the selected health care facilities. The session was focused on the planning and conducting of supportive supervision.

A second visit to all the health care facilities selected was conducted and the quality of reports and records were assessed again. The second visit showed a significant improvement in overall report quality at CHC, PHC and Sub-centers (Table 1). The data quality under HMIS especially in Maternal and newborn health service indicators also improved significantly (Table 2). Most of the sub-centers i.e. 24 out of 28, showed statistically significant improvement as far as MCH data quality is concerned (Table 3).

Table 1: Rating of overall quality of HMIS for different health facilities in District Sonapat

Parameter		Good	Average	Poor	P-value (Chi-sq test)
CHC	Overall quality 1 st visit	Nil	04	03	<0.05
	Overall quality 2 nd visit	01	06	Nil	
PHC	Overall quality 1 st visit	Nil	09	05	<0.05
	Overall quality 2 nd visit	02	12	Nil	
Sub-center	Overall quality 1 st visit	Nil	14	14	<0.05
	Overall quality 2 nd visit	06	22	Nil	

Table 2: Rating of overall quality of Maternal & newborn care services under HMIS for different health facilities in District Sonapat

Parameter		Good	Average	Poor	P- value (Chi-sq test)
CHC	Maternal & newborn care services related quality 1 st visit	Nil	Nil	07	<0.05
	Maternal & newborn care services related quality 2 nd visit	01	06	Nil	
PHC	Maternal & newborn care services related quality 1 st visit	Nil	02	12	<0.05
	Maternal & newborn care services related quality 2 nd visit	02	12	Nil	
Sub-center	Maternal & newborn care services related quality 1 st visit	Nil	05	23	<0.05
	Maternal & newborn care services related quality 2 nd visit	04	24	Nil	

Table 3: Comparative Scoring of HMIS data quality for Sub-centers in District Sonapat

HMIS report parameters	Visit	Mean	SD	P value (paired 't' Test)
Overall quality	1 st visit	4.51	1.15	<0.05
	2 nd visit	7.32	1.36	
Maternal & newborn care services related quality	1 st visit	16.51	4.93	<0.05
	2 nd visit	29.85	4.38	

After the sensitization session on supportive supervision for MOs, SMOs- there was significant improvement in their roles and responsibilities. At all of the levels of health facilities, the feedback was given by the concerned officers. The knowledge of the MPHWs also improved significantly - regarding the various key areas related to maternal and newborn care.

DISCUSSION

In the present study it was found that the data being generated by different level of the health care delivery system in the district was not of good quality due to lack of knowledge regarding the data that are being generated by the health workers and lack of supervisory activity by the mid and higher level health managers like MOs and SMOs. Similar type of finding was observed

in a study conducted by Nyamtema A S^[8] in Tanzania. Incompleteness of the data generated being attributed to the lack of regular sensitization or refresher training of all level health staff. The concerned health staffs also have an unmet need of training for the HMIS. A single briefing and supervision session by the researchers brought a lot of changes in the quality of the data that were being generated. A lot of man power and man hours are being spent for generating the data at the health systems but lack of regular training and supervisory activities making the process a futile one.

CONCLUSION AND RECOMMENDATION

To generate good quality of data from the health system we need trained health work force and on job training of the health work force as well as. Periodical reorientation trainings at all level for the HIMS and supportive supervision by mid and higher-level health managers like MOs, SMOs to hone the skills of workers need to be done.

Limitations

There are some areas in which knowledge of MPHWS is lacking, e.g. - timing of Ante-natal & Post-natal visits, Anemia in pregnancy, detection of high risk factors during pregnancy and in newborns. Researchers had addressed both the issues simultaneously i.e. knowledge as well as supervision and were not able to quantify the contribution of individual intervention on data quality improvement separately.

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