

Pakistan's Health Management Information System: Health Managers' perspectives

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Abstract

Objective: To explore the perceptions of health managers regarding Health Management Information System (HMIS), within their organizational setting and in the context of decentralization process in Pakistan.

Methods: Owing to the importance of HMIS as a decision making tool and the dependency for its effectiveness on the field-managers who are the key stake holders, a qualitative research was planned to explore, understand, and describe the perceptions of health managers regarding HMIS within their organizational setting in Pakistan. The study was carried out in seven selected districts in all provinces of Pakistan.

Results: The strengths highlighted were the sustainability of system even after suspension of funds from donors; vast coverage of over ten thousand health facilities, logistics and drug support systems. The weaknesses included scarcity of resources (i.e. skilled personnel and financial resources), contentious quality and underutilization of data; lack of motivation and feedback among health managers.

Conclusions: There is a need to instigate organizational development and institutional strengthening initiatives. These may include defining the structure of organizations; specifying the roles, responsibilities and defining a career structure; managing resources; overhauling the training activity, right from needs assessment to evaluation; creating sense of responsibility; motivating the staff; giving incentives for good work and inculcating work ethics (JPMA 59:10; 2009).

Introduction

The Health Management Information System (HMIS) was designed to generate information on the status of ongoing health-related activities in order to facilitate evidence-based decision-making and effective management of health care systems at all levels.

Historically the initial focus in information systems has been on the technical aspects, and it has recently been recognized that people and organizational issues are of critical importance in the implementation of information systems.¹

Lorenzi et al. have discussed the importance of organizational factors such as organizational culture, development of staff skills, commitment, and initiative in managing informatics implementation. They pointed out that the national culture can also have an important impact on the style of management and the nature of an organization.²

Mitchell³ emphasized that the effectiveness of information technology in health care depends on the position of organization in health care institution and on the organization's own internal structure. He argued that the organization needs strong leadership with sufficient means and abilities to manage change in the organizational and work paradigm.

Lorenzi and Riley⁴ suggested that information system failures occur for various reasons, including lack of psychological ownership, communication problems, cultural problems (such as hostile cultures within the information systems organization), underestimation of complexity (missed deadlines, cost overruns and lost credibility), failure to define and maintain success criteria, organizational factors (such as lack of a clear vision of change, ineffective reporting structure, rapid staff turnover, low staff competency, lack of full support from higher management, confusion on roles and responsibilities, inadequate resources, failure to benchmark existing practices, inability to measure success etc.), technological factors (e.g. system too technology oriented), and training factors (e.g. inadequate or poor-quality training, poor timing of training, i.e., too early or too late).

In Pakistan, before the 1990s, several vertical programs with categorical disease-specific information systems resulted in fragmented data transmission, which made assessment of program effectiveness difficult for managers.⁵ In 1991-92, the Ministry of Health (MoH) undertook an assessment study of existing health information systems and, based on its recommendations, transformed the reporting systems into a comprehensive National Health Management Information System through a

consultative process that continued through 1993.⁶

The national feedback reports on the new HMIS acknowledge a gradual improvement in scope and reporting regularity, but also note the continued need for improvement in the quality and utilization of information at various levels.^{5,7,8} A study carried out in 2000 pointed out that the information generated through HMIS was irrelevant and the data did not help managers to make decisions.⁹

Later, Pakistan's MoH, in view of provincial managers' growing concerns about the HMIS, organized a number of workshops and acknowledged the continued existence of vertical information systems and a culture of non-evidence-based decision-making, usually without use of relevant information.¹⁰

Under the devolution initiative, Pakistan's MoH has recommended strengthening of health information systems for informed decision-making in planning, management, monitoring and supervision of health services for improved service delivery in the districts.¹¹ However, the attempts at strengthening information systems have generally proved unfruitful and some times counterproductive.¹² Analyses of the failures often overlook the perceptions of stakeholders as an important factor.¹³

This study was conducted to explore the perceptions of health managers regarding HMIS, within their organizational setting and in the context of decentralization process in Pakistan.

Subjects and Methods

A descriptive study utilizing qualitative techniques was adopted to explore the perceptions of managers. Primary data was collected during September 2004, through in-depth interviews carried out at health facilities at federal, all four provinces and seven districts (Hyderabad, Lahore, Sheikhpura, Islamabad, Peshawar, Quetta and Mustang). The questionnaire was piloted and modified accordingly. A total of thirty interviews were undertaken at their work places. Open-ended questionnaires with probes were used during face-to-face interviews. Data analysis was done through statements, meanings, themes, and general descriptions of experience that emerged out of the responses.¹⁴

Results

The following themes emerged based on the interviews with the health managers:

A. Perceptions of managers on HMIS

Perceived strengths

The respondents mentioned that one of the strong

points of the current HMIS in Pakistan was that it was receiving reports from over ten thousand health facilities, and also gives good coverage of logistics and drug support systems.

They also highlighted that HMIS was developed through a consensus-building process among all district and provincial managers that created a strong sense of ownership. The HMIS also offered complete training manuals, and even district health offices were equipped with computers through which the HMIS database could be properly utilized.

One of the unique features of the HMIS was that, whereas donor-funded projects typically collapse after funding is withdrawn, this project has sustained itself long after the end of major funding from USAID, perhaps due to the strong political will and feeling of ownership among health managers. As one of the respondents mentioned, "Most of the donor funded projects collapse as the donor support is withdrawn but after the departure of USAID, HMIS has flourished".

While the previous health information system collected information on 110 health problems, most of which was not used for any purpose, the current HMIS is monitoring selected diseases and has narrowed down their number to 18 priority diseases, covering both the preventive and curative aspects. Thus, at the national level, a uniform reporting system has been adopted which not only is flexible (i.e. accommodating other information systems) but also provides information on multiple programmes.

Perceived Constraints on Resources and Skills

The respondents mentioned that there were issues related to the scarcity of resources, such as a lack of skilled personnel and financial resources. This weak financial situation also forbade them from performing minor computer repairs, making software purchases, and even maintaining an internet line because of failure to make payments on time.

Regarding staff training needs, respondents mentioned that initially no criteria identified staff training needs or helped to select staff for the refresher course in HMIS. "Selection of the trainee depends on the personal likes and dislikes of the manager concerned," a participant maintained. Consequently, HMIS training became more of an excursion than a professional skills-upgrading course, as noted by one participant, "training is taken as a source of entertainment".

They commented that the quality of training and dedication among senior level management was also questionable. "The trainer took sessions for only two days and DHO wrote that training was conducted for six days".

Due to monetary constraints, the training for health staff was severely affected as they did not have enough money to hold seminars and meetings or even provide a decent traveling allowance to the health staff, which ultimately sapped motivation and aggravated staff absenteeism. Finally, the last refresher course was held almost ten years previously.

Misuse of resources

A few respondents mentioned "HMIS cell was dubbed as a typing center". The HMIS staffs were forced to take on irrelevant tasks such as typing official (but irrelevant) and non-official letters for the senior management. One respondent pointed out that, there were also reports that the computers assigned to this cell were appropriated by senior management.

It was also noted that in many cases incompetent or unqualified staff were appointed in the HMIS unit, since the post of HMIS coordinator involves little if any financial incentives. A respondent also said that "HMIS unit is considered a dead end job".

It was pointed out by respondents that in many cases when a provincial HMIS office inquires about the cause of a surge in a disease and the measures adopted to curb it, the district reacts peculiarly, trying to skirt the issue by blaming it on a data entry error instead of an epidemic. This behaviour causes distrust among management, and some managers also doubt the quality of data generated by the HMIS offices.

Some respondents also mentioned that there was a lack of proper monitoring and supervision of activities.

For the management, HMIS seems to be a least priority issue as they are mostly engaged in other time-consuming administrative issues and other priority initiatives or issues which directly or indirectly affect their career situation.

Quality, coverage and coordination issues in HMIS

The respondents stated that in many instances data entry in the HMIS reporting forms is entrusted to auxiliary health workers, who have little knowledge of English. At higher levels, many doctors do not write down the age of their patients or the diagnosis, casting doubt on the accuracy of the data. The example of Guinea worm was cited, which was eradicated years ago, but it is still reported erroneously.

The senior managers complained that HMIS data are often sent by districts on floppy disks that cannot be opened, causing problems and resulting in delays in publishing reports.

There were also concerns regarding HMIS coverage. It was acknowledged that although HMIS is a nationwide network, it does not cover important areas such as secondary or tertiary care hospitals, and a huge private sector is completely overlooked.

In addition to the above, there is no section in HMIS which focuses on refugee health issues separately, keeping in mind that Pakistan has a large Afghan refugee population.

Another issue of concern was the lack of coordination among various information systems. The managers mentioned that they are overburdened by requirements to produce multiple reports demanded by vertical programmes, besides the national HMIS.

They also mentioned that there was lack of interdepartmental and intradepartmental coordination in terms of information sharing. At the federal level the perception is that HMIS is purely a provincial issue, while at the district level the managers are indifferent because the feedback to district level is either absent or delayed, so the information cannot be used effectively for health planning.

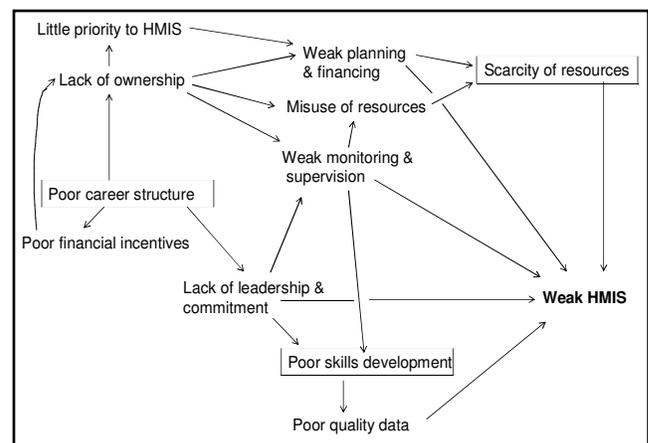


Figure: Organizational Concerns about current HMIS.

B. Suggestions to improve HMIS in Pakistan

Encourage data utilization at policy levels

It was suggested that data utilization should be encouraged at higher levels of management, and by increasing its usage, the quality of data will also improve in the long run, as was quoted by few participants, "...by default, the more you use it [HMIS] the more it gets refined."

It was also suggested that the quality and frequency of reporting should be improved. Regarding quality, it was further added that it should not only put emphasis on the contents, but also on the print quality and the language used, with a view to improve readers' comprehension.

A user-friendly report with simple and clear explanations will encourage managers even at the lower levels to make use of data in their management. A standard format for every report will also help in comparisons with the past reports.

Use of the Internet should be promoted in order to rectify the problems caused by delays in data transfers from peripheral to central levels and to ensure safe data transmission; staff capacity should also be built up to analyze data to provide an efficient feedback reporting system and information dissemination capability at both the provincial and the district levels.

Community surveys for validation and comparison, though expensive, may prove their worth as important supplementary assurance of HMIS data quality and contribute, together with other measures, to greater confidence in the quality of data. "If reporting person adds few lines on what efforts were undertaken to ensure the quality it will make the report more appealing" a participant quoted.

Integration of vertical information systems

It is vital to discourage the duplication of data collection efforts in various vertical programs and promote one National HMIS, saving not only finance resources but also time and manpower. First, the vertical programmes' priorities should be incorporated within the current HMIS. Closer coordination among various information systems should be encouraged through regular meetings.

Employment Structure in HMIS Units

Orientation at the time of induction in HMIS, clarification of the terms of reference for the posts of various cadres, and career growth are vital to keep the right person in the right job in every unit.

Introduction of internal as well as external systems of monitoring and supervision and audit are necessary to ensure quality.

It was also acknowledged that statistics is not much emphasized as a subject in medical schools, so the post of HMIS officer might preferably be given to a statistician to increase data entry efficiency and ensure meaningful analysis.

Motivation and Feedback

It was a shared view among respondents that leadership can motivate and encourage staff by identifying mistakes during supportive supervision and recognizing hard work through financial incentives of some sort or letters of appreciation for good work.

Similarly, a regular feedback from centre to

peripheral levels is thought to build confidence among staff that their work is being observed and valued by senior management.

Staff should be encouraged to hold frequent interdepartmental meetings, which can help to highlight their problems and settle such questions as training requirements, assignment of material, and definition of areas of activity; resolving these issues amicably through dialogue further motivates staff and inculcates a strong sense of coherence and team work.

Human Resource Development

Respondents particularly emphasized that training should be a regular feature and that certain categories of personnel should be trained at least once a year. The training should effectively enhance the staff's knowledge and skills in HMIS. During training programmes, the importance of HMIS for trainees should be stressed, as trainees lack awareness of this aspect of HMIS. Trainees should be trained in proper data entry, analysis and transformation into information. Training should stress epidemic detection and disease early warning. Efforts should also ensure that the right people are trained in the programme and their availability should be ensured through minimal or less frequent transfers.

Establishing Role Model Districts

It was also suggested that model districts should be developed in each province where HMIS is functioning effectively; study tours of such models can assist visitors from other districts and managers, decision makers, and policy makers to learn and adopt the best practices.

Discussion

Research has indicated that in Pakistan, management styles and the structure of public sector systems are unsupportive, marked by oppressive use of power, and adversarial relationships between managers and the subordinates. Managers assert their authority by excluding subordinates from decision making or transferring staff.¹⁵ These attributes were reconfirmed in this study.

By and large, the respondents expressed discontent with the existing health management system within which HMIS operates. Individuals naturally seek to fulfill their physical and security needs. Their security needs feed a sense of fear or threat of being transferred, fear of accountability, fear of challenges to their authority (as senior managers do not share job descriptions) and fear of creating grudges by criticizing the management.

In such an atmosphere of prevailing fear, the role of the leader can be very significant. The literature has

indicated that leaders can inculcate their values in the system and play a crucial role.¹⁶ During the gradual evolution of HMIS in Pakistan, continual efforts by such leader-managers to ensure sustainability made all of these possible through such diverse stages as initiation, ensuring submission of reports regularly, decreasing inaccuracies, and arranging resources for the programme through personal contacts.

Lack of clear job descriptions leads to confusion over roles and responsibilities, dissatisfaction and lack of motivation secondary to absence of appreciation or rewards for hard work, as reported in other studies.

Two basic concerns of HMIS managers were the absence of a career structure and other managers' inability to utilize data. These concerns come under the purview of human resource development. The literature has mentioned that through decentralization and other reforms much attention is paid to financial and structural reform measures, but human resource implications are ignored. It has been suggested that prompt attention be given to 1) defining the essential human resource policies and developing planning and management skills for national human resource managers who work in decentralized systems as well as training programs to equip them with such skills; 2) supporting research that focuses on improving the knowledge base of how different modes of decentralization impact on staffing equity; and 3) identifying factors that most critically influence health worker motivation and performance under decentralization, and documenting the most cost-effective best practices to improve them.¹⁷

Capacity-building efforts need to be institutionalized. On the one hand, training and refresher courses need to be offered on a regular basis, and on the other, the process of training and progress monitoring of training and training evaluation need to be given stronger emphasis.

Great hurdles to the integration of HMIS with vertical programmes are perceived even in the developed world where donor-driven "vertically structured empires" with separate systems, separate manpower, and separate management hierarchy are set apart from line management.¹⁸ Some of the respondents suggested integration and coordination among vertical information systems as a solution to this problem.

From the perceptions on training it is evident that the whole training process needs to be seriously appraised. A possible reason for ineffective training may be, in addition to possible flaws in the training cycle, the lack of ethical or professional incentives to utilize staff skills in routine work. The institutionalization of work ethics starts right from the top-level managers at the highest levels of power and decision.

One way of addressing this issue is to adopt a code of ethics.¹⁹

"Ownership of the programme" is an umbrella term or theme that encompasses many issues. This pertains to making the financial arrangements for the system and establishing the system through appropriate strategic and operational planning (including, for example, designing and disseminating job descriptions of personnel at every level) and bringing about well planned changes when required.

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