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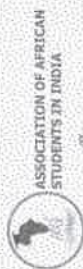
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## An assessment of Utility of Health Information Systems to Health Workers

Prasuna.Kuragayala\* & Dr. Shaji .K. Joseph\*\*

### Abstract

*The utility of health information systems is essential in health care sector for providing better services. It helps to improve the overall efficiency and effectiveness of health care services. Combing the services of health care sector with information technology has made the coordination of large units and functions of health care to provide improved and better services. Managing records and details of patients, clinical information and financial management and other comprehensive details related to health care sector has become easy with the usage of information technology. Such information accessed through information systems helps the health workers to providing better health care services to patients. The present study aims to understand the utility of health information systems to health workers for accessing , storing and sharing routine information.*

**Keywords:** Health Information Systems, Health Care, Health workers.

### Background

The health information system (HIS) provides the underpinnings for decision-making. Primarily the important key functions of health information systems are data generation, data compilation, data analysis and data synthesis, and use it for further communication purpose. The health information system collects and maintains data from the health sector and other relevant sectors. HIS analyses the data and ensures the overall quality, relevance and timeliness, and converts data into information for health-related decision-making. HIS integrates health related data required for all levels of health care team and helps in better coordination of services delivered (WHO, 2008) . A good model of HIS supports all aspects of business operations such as managing patient records, accounts and financial transactions and third party interactions mainly insurance companies. At the same time maintaining electronic health records through proper clinical documentation is important. Facilitation of communication among all the health care team mainly doctors, nurses, administrative staff is essential. The implementation of HIS must be simple , sustainable without adding too much costs and help for health workers in their routine work .Integration of data done through HIS should be accessible and of utility to end users. The design of HIS should not be complicated. It has meet the real time requirements of health care sector in a easy way without much difficulty and gaps. The current research aims to understand the utility of HIS mainly to health workers in their routine work and their overall satisfaction levels with regards to certain aspects of HIS.

### Introduction

Health information systems helps to integrate the collected data for generating required reports and information required at all levels of health services and for efficient management of health services. The value of such information stored will depend up its utilization for improving of health services. Most health workers think that health information systems is to fillendless registers and forms with names and addresses of patients, compiling information on disease every week or month, and sending reports to the next level without adequate utilization and feedback (Heeks, 2006). At the same time deployment of health Information Technolog alone is not sufficient to improve quality in health service delivery; what is needed is a human factors approach designed to optimize the balance between health-care users, health-care providers, policies, procedures, and technologies.(Kappelman , McLean (1991).

The implementation of Hospital Information System should be well planned. Care should be taken while choosing the vendor and software. The chosen software should be able to meet the objectives of the organization and meet the requirements of health care services delivery team (Kim J.et al.,2012). Since the implementation of information systems involves investment of financial resources it should be ensured that it is successfully adopted at all levels in the organization (Amin et.al 2011) . The different levels of hospital administration, human resources and technology need to integrate so that the service processes apply the benefits of information systems in delivering quality services. Health management information system (HMIS) is a means that allows collection and storage as well as analysis and usage of health data

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to improve patient satisfaction with health services by tracking certain dimensions of service quality( Baus A, 2004). The HIS customers are classified into internal and external. Internal customers are physicians, nurses, laboratory technologists, pharmacists, quality department, and others within a healthcare facility that interacts with the essential processes. External customers are patients, patients' families, insurance providers, suppliers, health services researchers, etc. The success of HIS implementation depends on its implementation and utility to both external and internal customers on a regular basis. The user's expectation about the health information systems should be understood and the issues need to be handled as they arise for smooth flow of activities. This will help to improve the quality of services delivered by health workers thus resulting in better satisfaction of health workers

This research focuses on the utility of health information systems to Internal customers working in the health care sector. Mainly the health workers working in hospitals are considered for the purpose of study. The overall utility is analyzed based on certain features of quality of HIS in terms of storing the information, accessibility and overall satisfaction of users for their daily routine work .

**Research Objectives**

The research objectives are therefore as follows

1. To understand the quality of health information systems implemented to help health workers in routine work.
2. To understand the overall satisfaction level of health workers while using the health information systems in routine work.

**Methodology**

For the purpose of the study the required data was collected from health workers working in hospitals of Navi Mumbai region in Maharashtra. The category of health workers chosen are mainly Nurses, Administrative staff and accounting staff working in hospitals. 72 respondents have been chosen for the purpose of this study. This study was conducted using a questionnaire. Respondents were asked to fill out the questionnaire which was prepared by listing out certain features of HIS. Prior to the analyses, all variables were examined for accuracy of data entry and missing values. Missing cases were excluded from the data while carrying out analyses using the SPSS software. The data was analyzed using SPSS.

Some of the characteristic features of usage of HIS have been identified which are Accessibility, Technical support, Confidentiality, Quality and overall satisfaction levels. Based on these features a questionnaire was designed. 72 respondents working in various levels mainly nurses, administrative staff, accounting staff have been asked to respond. Non parametric tests have applied for data analysis and interpreting the results

**Hypothesis**

- H<sub>0</sub> There is no significant difference in the overall satisfaction of health workers with the utility of HIS in routine work.
- H<sub>1</sub> There is a significant difference in the overall satisfaction of health workers with the utility of HIS in routine work.

**Data Analysis**

- Test Statistics: Friedman Test

Ranks		
	Features of HIS	Mean Rank
<b>Accessibility</b>	The nature of work involves data storage in HIS matches the skills I possess	11.27
	The HIS display of data is user friendly	12.42
	The data is accessible easily	13.06
	The other team members input data is accessible if required	12.09
	Timely retrieval of data is possible when ever I need	12.32
<b>Technical support</b>	I get access to computer whenever I require	12.80
	Required training has been provided for usage of HIS	13.01
	The customisation of tasks performed by me has been done	12.45
	Technical issues are solved on priority basis	13.29

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<b>Confidentialty</b>	Privacy of information stored by me is there	12.71
	Information stored about patients is safe	11.99
	Redundancy of work is eliminated	13.76
	Secured systems are in place	11.49
<b>Quality</b>	I feel the service delivery has improved with the utility of HIS	10.54
	Information is stored in an organized way	7.35
	Time is saved with the utility of HIS	10.29
	Quantity of work in terms of maintaining files has reduced	10.20
	Overall quality of services have improved	14.11
<b>Overall satisfaction</b>	Outcomes of work have improved with the utility of HIS	11.77
	Immediate assistance in my work is available because of HIS	11.30
	I feel satisfied with the utility of HIS in my job	11.88
	Interaction with patients has become easy with HIS	13.29
	Regular feedback from all team members gives better satisfaction in work	12.63

Test Statistics	
N	71
Chi-Square	112.559
Df	22
Asymp. Sig.(p-value)	.000

### Conclusion

Since  $p\text{-value} = 0.000 < 0.05$ , we reject  $H_0$ . Hence, we conclude that there is a significant difference in the overall satisfaction of health workers with the utility of HIS in routine work. The data is easily accessible for health workers but they feel that the usage of HIS may not be related to all the roles held by them. A good technical support system is available but the customization of tasks done by health workers may not be possible completely. Confidentiality of data is possible but since it is accessed at all levels the data may not be safe in all aspects. Overall quality of services have improved with the implementation of HIS. Since the kind of patients differ in the services they avail it may not be possible to store data in an organized way. The health workers are overall satisfied with the quality and utility of HIS. They feel that interaction with patients and other team members has become easy with the implementation of HIS.

### Limitations

The study was limited to only hospitals using HIS in Navi Mumbai and was limited to 72 respondents only which is very less if we compare it with the total number of health care employees and hospitals located in Maharashtra.

### Managerial Implications

In this age of digitization it is important to understand the utility of HIS for health workers. Since implementation of HIS is time consuming and also lot of financial investment it is essential to understand the benefits aspects to end users. The feedback of internal customers about HIS who are considered for the purpose of study is important to bring the required changes in HIS for efficient delivery of health care services.

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