A study on the Satisfaction level of the Hospital staff and patients with the Existing Medical Record System at Pondicherry

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ABSTRACT

Patient care includes a chronological record of care and treatment, namely medical records. Medical Records Department (MRD) has become an essential department of every hospital (Chattoraj et. al 2005). The principle is "people forget, but records remember." Medical Records Officers (MRO) and technicians have become specialists in their own right. The custodian of medical records is the hospital, but the information contained therein is the property of the patient. So when a patient asks for any information contained in the records, or the record itself, it becomes very difficult to search as most of the patient data are paper based. This study aims to find the satisfaction level of hospital staff and patients with the existing paper based medical record system and whether they prefer to go for transformation to electronic medical record system. The target respondents for the study are hospital staff and patients from 5 different hospitals in Puducherry. Simple random sampling was the technique used to select samples. 50 patients and 250 hospital staff were selected at random and separate questionnaires were distributed to them. From the data collected statistical analysis was done using simple charts and ANOVA. From the result of the analysis it was found that hospital staff and patients both had moderate level of satisfaction with the existing paper based medical record system. ANOVA showed no significant difference in the satisfaction level with the existing medical record system for both hospital staff and patients. Also the users i.e the hospital staff and patients were ready to accept the electronic medical record system if implemented.

Introduction

According to Sathyaraj (2009), Health care industry in the world is a multicrore industry. Almost every hospital in the developed nations uses EMR (Electronic Medical Record) system. Though health care industry in India is a multicrore industry and there is enormous scope for medical tourism, the implementation of EMR is in the nascent stage. In India the major corporate hospitals have started to change to EMR from the traditional paper based medical records system. The dry run of the initial Rs 5 crore EMR (Electronic Medical Record) system by Apollo in association with 40-odd hospitals in south India and networking of 2 lakhs doctors was done in October 2008 in commemoration of their 25th anniversary of the hospital. The EMR system will facilitate greater sharing of patient's medical history information among participating hospitals apparently aiding in delivery of an enhanced

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medical care. Indian EMR envisaged by Apollo IT team is designed on compliance standards prescribed by US HIPAA (Health Insurance Portability and Accountability Act). The HIPAA compliant model would ensure safety and protection of patient's medical records against tampering and unauthorised access online, according to Sangita Reddy, executive director of Apollo Hospitals Group (AHG) (Financial Express, 2008).

Literature Review

The complexity of healthcare increased over the years and it became more and more likely that practitioners would not be fully informed about patients' present and previous health status and treatment. Practicing healthcare in this manner with lack of information had become a habit. Electronic Health Records (EHRs) consist of software applications that provide integrated, longitudinal views of patient data. The information included in EHRs contains demographical and health records, as a minimum. EHRs would provide several software applications in a networked environment, including clinical decision support, physician order entry, integrated communication with laboratories, imaging centers, and other facilities, and would include population health management. The Australian Electronic Health Records Taskforce Report (2000) provides a definition of EHRs that includes all the components of comprehensive EHRs model: "An electronic longitudinal collection of personal health information, usually based on the individual, entered or accepted by health care providers, which can be distributed over a number of sites or aggregated at a particular source". EHRs make possible the sharing of data by electronic information exchange and lead to the uniform system of medical documentation and better information management. A major source of medical errors is the handwriting. Medical records on a paper basis are not always properly performed and sometimes illegible prescriptions and medication orders that may result in side effects or drug interactions may occur.

The term EHR is accepted globally as the generic term for the vision of electronic patient care systems. Nevertheless terms such as CPR (computer-based patient record) continue to be used in some circles, adding to the confusion. The main difference between EHR and CPR is that the first does not necessarily contain all information from pre-natal to postmortem information but focuses on relevant information for current or future care.

Functions that EMRs may have are sometimes confusing and not always clear because of the different existent view of professionals involved. C. Peter Waegemann (Medical Records Institute) (2003), in his status report on electronic health records stated a list of ten key functions of an EMR system (2002). These functions represent the minimum set of functionality of an EMR:

- Recording function. The recording function is often falsely considered the only main function of EMR. This function traditionally helped physicians to remember details about patients serving as "aide-mémoire" and continues to serve them on EMRs.
- Sharing of information. Since the health care systems became more complex and more health professionals are involved in the care of the same patient the exchange of information have became more and more essential. The sharing of patient medical information is important in

order to reduce medical errors, to ensure a more efficient continuity of care and to increase the quality of medical care provided.

- Order entry is one of the most important components of an EMR.
- Retrievability and accessing patient information is a key component of the functionality that increases the efficiency. Particularly in cases where lots of information is stored for one patient, this function pulls together all relevant information and displays it to the health professional.
- Built-in functionality for the key elements of health documentation. It will not allow documentation or accessing of information that does not have unique identification of the patient, is not accurate, is not complete, or timeless. This means that the system has interactive recording in which the user is prompted for specific information elements.
- Authentication. The system should identify the author of the record through device access control and seal the document after a digital signature has been attached. All the users should have their unique authentication signatures.
- Audit activities. The system must have a built-in way to audit all activities.
- Overall security must be assured within an EMR.
- Interaction with decision support must be provided.
- Interoperability. EMR system should be compatible with other systems.

Objectives

1. To find the satisfaction level of the users (Hospital staff and the patients) with the existing Medical Record System (Paper-based medical records).
2. To evaluate the opinion of the users regarding implementation of Electronic Medical records (EMR) in hospitals.

Hypotheses

1. There is no significant difference in the satisfaction level of the hospital staff and the patients regarding the existing medical records system.

Research Methodology

This study belongs to the survey type of descriptive research. Primary data were collected using questionnaire. Two separate scales were used to collect data from hospital staff and patients. For both the constructs Likert's five point agreeable scale (Kothari, 2004) was used. 12 questions for each of the constructs were used. Pilot study was conducted among 15 samples for hospital staff and patients separately and inappropriate questions were eliminated from the questionnaire. The

questionnaire was tested for reliability and Cronbach's alpha (Paneerselvam, 2006) of 0.7832 was found. This showed good internal consistency and therefore reliability of the questionnaire. These two sets of questionnaires were distributed to 50 hospital staff and 250 patients at random. Target respondents for the study consisted of different categories of staff from various hospitals, i.e doctors, nurses, paramedics, lab technicians and patients visiting these hospitals. The samples belonged to 5 different hospitals in Puducherry, both government and private. From the data collected master table was created. Average satisfaction scores between 12 and 28 were considered low, 29 and 44 were considered moderate and scores between 45 and 60 were considered high for both hospital staff and patients.

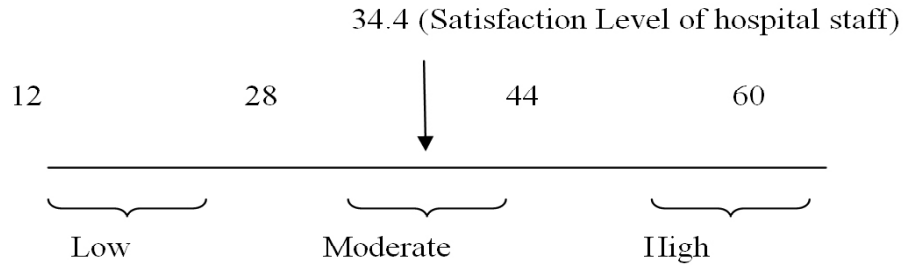
Secondary data were collected from hospitals and web resources.

The data so collected were edited, coded, classified and tabulated. Statistical tools such as ANOVA and chi – square were used to analyse the data.

Results and Discussion

Data collected from the questionnaire were analysed and the following line chart was arrived at.

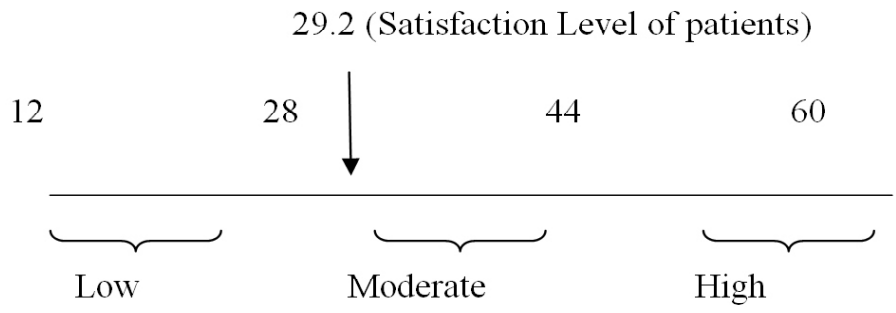
Fig. 1



Source: primary data

Calculations from the master table gave a moderate level of satisfaction of the hospital staff with the existing medical record system. Similarly the level of satisfaction of the patients with the existing medical record system is as follows.

Fig. 2



Source: primary data

Calculations for the satisfaction of patients with the existing medical records system also shows moderate level but the average score is 29.2 which is much lower than that of hospital staff 34.7

Table 1 : Showing Analysis of Variance for satisfaction level with existing medical record system between different hospital staff and patients

Sl. No	Variables	Levels	N	Mean	SD	Source	Sum of Squares	Df	F value	p value
1	Hospital Staff	Doctors	41	33.4	1.3247	Between Groups	119.23	3	6.483	0.105
		Nurses	58	35.6	1.2332					
		Paramedics	64	32	2.3876	Within Groups	293.11	246		
		Lab Technicians	87	36.6	1.7524					
		Total / Average	250	34.4	1.6745	Total	412.34	249		
2	Patients	In Patients	15	28.7	1.3237	Between Groups	124.56	1	2.858	0.612
		Out Patients	35	29.7	1.1819	Within Groups	231.55	48		
		Total / Average	50	29.2	1.2528	Total	356.11	49		

No significant difference is seen in the satisfaction level of hospital staff and patients

From the above table 1, no significant difference is seen among the different hospital staff and also patients.

Table 2 : Showing the opinion of respondents regarding implementation of the Electronic Medical Record System.

Categories	Opinion regarding implementation of the Electronic Medical Record System				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Hospital Staff	86%	9%	5%	Nil	Nil
Patients	70%	21%	9%	Nil	Nil

Table 2 shows the opinion of hospital staff and patients regarding implementation of electronic medical

record system. Both the categories of respondents are of the opinion that EMR should be implemented for better service of patients by the hospital staff.

Findings and Recommendation

From the above calculations it was found that the hospital staff and patients have moderate level of satisfaction with the existing paper based medical record system. Also it is seen from Table 2 that they are willing to accept the new electronic medical record system and they want it implemented. It is found that there is no significant difference in the satisfaction level of hospital staff and patients regarding the existing medical record system. Therefore, it is recommended that electronic medical record system is implemented in all hospitals of Puducherry instead of the existing paper based medical record system.

Conclusion

For a long while, healthcare organisations have kept paper-based records but they have their shortcomings, some of which include an increasingly mobile society means that people now change their family doctor more often. It is difficult to find specific information in paper-based records, increasing the possibility of missing vital information that might be hidden within a cluster of non-relevant data. Paper records are hand written and these might be difficult to read or interpret by healthcare professionals other than the author. Paper records make the use of decision support systems extremely difficult especially during consultations. Electronic Medical Records (EMRs) have been introduced to address these issues and it is now possible to store part or whole of a patient's record on a computer. Simple EMR software presents the user with a simple user interface where the patient's information can be entered or viewed. The user interface communicates with a database management system (DBMS) to retrieve, store or update patients' data in a computer database. EMR systems might also make use of a decision support system to provide alerts and reminders, and expert guidance during consultations.

Some of the advantages of which healthcare organisations that adopt EMRs can enjoy over paper-based records are EMRs can get rid of the need to duplicate patient details on new documents, as these appear on the screen by default. EMRs are available 24 hours a day and are accessible instantly and simultaneously by many users, and this could be beneficial during emergency care. Computer generated notes are easier to read than handwritten ones. Decision support is easier to implement with EMRs. Transfer of records can be done electronically between different organisations no matter the distance and time, and at almost no cost, so long as the sending and receiving systems adhere to some information exchange standard such as HL7. More importantly, EMRs have the potential to reduce the cost of record management associated with paper-base records through the elimination of duplication and loss of records and loss of time associated with the difficulty of interpreting handwritten notes. It is also possible to implement audit trails with EMRs, so it now possible to keep a record of those who access the records, when it was accessed and what changes were made to the records.

Keeping in mind the above mentioned benefits of EMR and the disadvantages of paper based medical records, it is right to conclude that hospitals can go for implementing EMR for the advantage of the patients, hospital staff and the hospital itself.

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