

E-MEDICAL RECORDS SYSTEM OF REYES HOSPITAL

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Chapter I

INTRODUCTION

Project Contents

According to Chui et.al (2013), a hospital is a place where patients received treatment. Hospital provides facilities such as doctor's consultation, diagnosis, and treatment facility in admitting patients; also it provides beds, nurses, medicines and immunization. Here in our country, it's typical to find a hospital or small clinic in almost each and every corner, of every municipality or city, some of these hospitals are well-run and well maintained, while others are not that organized, some even have a cheap but lousy service due to lack of staff, or maybe lack experience of the employees.

According to Yap et.al (2013), most of the hospitals nowadays try to keep up with the never ending, fast pace of technology, but sad to say, not every hospital can. Only the big hospitals are the ones that can manage to keep up with technology and for the record, those technologies are pretty expensive. With all this expenses of modern technology, we can say that more than half of the hospitals here in our country cannot afford to compete with the much modern and newer hospitals, so most of these hospitals option is to a much more boring way of manual systems, where every record, data, item is manually written into record sheets, papers, boards, and other things we can think of to make the manual process easier. The cost and expense for this operation is minimal, but the workload



and time of the process is way too much to handle especially if the owner of the hospitals considers expanding its business.

Electronic medical records (EMRs) are a digital version of the paper charts in the clinician's office. An EMR contains the medical and treatment history of the patients in one practice. EMRs have advantages over paper records. For example, EMRs allow clinicians to:

Track data over time and easily identify which patients are due for preventive screenings or checkups. Check how their patients are doing on certain parameters—such as blood pressure readings or vaccinations and monitor and improve overall quality of care within the practice. But the information in EMRs doesn't travel easily *out* of the practice. In fact, the patient's record might even have to be printed out and delivered by mail to specialists and other members of the care team. In that regard, EMRs are not much better than a paper record.

In charge hospitals, there is a significant demand for space used for the storage of conventional records (printed records), which may make it difficult to maintain them or even to access the information. Furthermore, it is not rare to find that these documents are complete or have problems with legibility but with the advancement of information technologies and systems, patient records can be stored in databases, resulting in a positive impact on patient care.



According to Hsiao et.al (2014), an information System (IS) is any combination of information technology and people's activities using that technology to support operations, management, and decision-making. In a very broad sense, the term information system is frequently used to refer to the interaction between people, algorithmic processes, data and technology. In this sense, the terms used to refer not only to the Information and Communication Technology (ICT) an organization uses, but also to the way in which people interact with this technology is support of business processes and is therefore relevant to the development of a records management system.

Electronic medical record (EMR) systems, defined as "an electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization," have the potential to provide substantial benefits to physicians, clinic practices, and health care organizations. These systems can facilitate workflow and improve the quality of patient care and patient safety. Despite these benefits, widespread adoption of EMRs in the United States is low; a recent survey indicated that only 4 percent of ambulatory physicians reported having an extensive, fully functional electronic records system and 13 percent reported having a basic system.

According to Desalvo (2013), e-Medical Record System is the professional practice or discipline of controlling and governing what are



considered to be the most important records of an organization throughout their life cycles, which includes from the records are conceived through to their eventual disposal. This work includes identifying, classifying, prioritizing, storing, securing, preserving, retrieving, tracking, and destroying of records. November 6, 2013)

E-medical Records System as a discipline involves records keeping. Record keeping is an important aspect of every organizations/institution's day to day operations. There cannot be a eMR without records and neither can there be efficient records keeping without eMR. Therefore, record keeping is the Systematic procedure by which the records of an organization are created, captured, maintained, and disposed of. This system also ensures their preservation for evidential purposes, accurate and efficient updating, timely available, and control of access to them only by authorized personnel.

The Reyes Hospital offered services such as Complete Laboratory Examination, X-ray, Ultrasound, Electrocardiogram, Intensive care Unit / Recovery Room, Operating Room / Delivery room, 24 hours outpatient services, 24 hours emergency room service.

In analyzing the current medical record system at Reyes Hospital, a lot of the records are stored in paper files and all the work are done manually by nurses and other operational staff on paper files. This means



that all this paper files need to be handle and taken care of with utmost care.

Due to this reason, the researchers would like to help organized the record keeping process of the hospital and give appropriate security measures to its records and best design that they could have for their proposed system.

Thus the proponents will make this project to help hospital secure their records.

Purpose and Description

This research study entitled e-Medical record system of Reyes hospital hopefully helps the following persons for several reasons:

Hospital Administrators

This study provider's capabilities for entering patient's information, diagnosis details and other records and save them. With the electronic medical record, data is more secured and can be burden of a time consuming transactions.



Hospital Staff

This project makes the task of Reyes Hospital staff's easier, minimize their time looking for documents and manage records in a well-organized manner.

Patients

This study is great help to patients of Reyes Hospital to have fast assistance when transacting.

Community

This study contributed to the enrichment of the field in Information Technology. This project is a useful reference in designing other computerized electronic medical records system of other hospitals and clinics.

Future Researchers

This study serves as a reference and guide in conducting related studies. Its weakness and shortcomings will lead other researchers on deeper studying and understanding and develop a more workable system.



Statements of Objectives

1. To determine the existing system of the Reyes Hospital in terms of:
 - a. data entry
 - b. report generation
2. To create and develop an e-medical record System of Reyes Hospital.
3. To test the usability of the system Reyes Hospital along:
 - a. attractiveness;
 - b. controllability;
 - c. helpfulness;
 - d. learnability;
 - e. efficiency.

Scope and Limitation

This study aims to develop electronic medical record of Reyes hospital. The system was designed to help the doctors and staff nurses in giving easy and fast assistance to their clients through computer access. The Administrators or the doctor or staff nurse in-charge can view, save information about the patient. The admin has all the privilege to fully control the system. They can also handle the maintenance of the system to ensure the data's integrity and reliability. In the development of electronic medical record system the proponents used, php, mysql, and wamp server. The system was being test by information technology experts with and the



proponents find out that the rating of the system is strongly agree and you can print a information.

The stock details of medicines in the pharmacy will not be covered by the proposed system. The study will not also cover out-patient department and the billing record of the hospital.



Chapter II

REVIEW OF LITERATURE

Medical Data Entry

According to Forster et.al (2013), the world is moving towards reducing the use of paper and going electronic. The digital age has added to the push for EMR (Electronic Medical Records). This calls for efficient medical data entry services. This is where Managed Outsource Solutions (MOS) can help.

Healthcare data entry demands precision and accuracy. Based on project specifications and client requirements, people use the latest technology to provide quality services. All information about the patient, chart information, appointments, account information, insurance, claims details, admission, diagnosis, doctors' notes, billing, and reimbursement data bases have to be documented. Our experts meticulously collect information from the medical forms, reports, charts, or other relevant medical documents and perform data entry to manage all this information efficiently.

Data Entry Services and Forms Processing

According to Hsiao et.al (2014), Managed Outsource Solutions (MOS) offers a wide range of affordable data entry services and forms processing services. We serve clients from various business sectors including insurance



and healthcare, education institutions, government agencies, publishing agencies, financial institutions, pharmaceuticals, and manufacturing.

Costs of Manual Medical Records

According to Hillestad et.al (2013), there are several types of costs associated with manual patient records. One type, duplication of the record, requires paper and copying supplies, as well as the staff to create and distribute the copies. Staff hired to assemble, file, retrieve, or distribute the hard copy chart is a costly expense. Storage of the paper record necessitates the use of valuable space that could be better utilized. The records also need to be protected from water, fire, or mishandling to preserve its physical integrity.

One of the most expensive disadvantages of the paper record is duplicating patient testing required to replace lost or missing test results. Repeating procedures may jeopardize the patient's health, creating a potential opportunity for an adverse medical event. Duplicate testing wastes scarce medical resources (time, staff, supplies, and equipment) that could be used for other patients. It is a contributing source to the rising costs of health care by generating additional charges to be billed to the patient, insurance company, or other third- party payor.

A related issue pertains to ordering procedures or tests that are either unnecessary or contraindicated. These types of decisions, when based on inadequate information or delayed results, create a potentially harmful



situation for the patient and a needless expense for all concerned. Claims submitted for medical errors that could have been prevented with accurate and accessible patient information are issues that are seen with the use of a paper record.

Lost Productivity from Manual Medical Records

According to Szolovits et.al (2014), lost productivity results from various inadequacies of the paper record. This affects multiple departments in a healthcare facility. Searches for misfiled charts waste time. Staff members' time is required to deliver paper records to a specific location. If the paper record is not readily available, clerical staff responsible for filing documentation may need to make several attempts before the task is completed. Medical errors may be made if the staffs make decisions on inadequate information.

Medical Records Manual: A Guide for Developing Countries

According to Sonada (2010), this manual is intended to help medical/health record workers in developing countries to develop and manage the medical record/health information service in an effective and efficient manner. It has been written for clerical staff with a basic understanding of medical/health record procedures and is designed to aid medical record officers (MROs) and medical record clerks by describing appropriate systems for Medical Record Departments.



Quality of Manual Medical Records

According to Mani et.al (2014), the issue of quality encompasses the physical record, the documentation, and patient care. There are limitations to the physical quality of the paper record. Paper is fragile and does not last permanently. Normal use of the record may result in torn or stained documents. Also, over the years, ink used to complete documentation can fade. Actual damage resulting from water or fire is another threat to the physical integrity of the paper record. Quality of the actual documentation varies based on the healthcare provider's documentation skills and knowledge level. While standardization of the data documentation has improved over the years, not all providers use the same abbreviations, terminology, format, or chart organization. This can result incomplete or inaccurate healthcare data collection. Handwritten information may be illegible, creating the potential for errors in patient treatment or medication orders.

The Electronic Medical Record

According to Law (2013), one goal in e-MRS development should be to facilitate a patient-centered clinical encounter. Much prior e-MRS development has focused on capturing objective data, such as laboratory values and medication lists. Less attention has been devoted to the more complex task of capturing and analyzing data that incorporates the patient's concerns and preferences.



A concern that regularly arises when the electronic medical record is introduced into a clinical setting is that the introduction of the electronic interface will, at least in the near-term, reduce the efficiency of the interaction between physician and patient and thereby reduce the number of patients that can be seen during the workday. A poorly designed e-MRS can force the physician to spend time on computer-centered tasks such as screen navigation and data entry, at the expense of time for patient-centered tasks.

One way to alleviate this potential time barrier to introduction of the electronic medical record accordingly is to create early opportunities for the electronic medical record to increase the efficiency of the clinical interaction. Even a fairly rudimentary e-MRS can assist in creating efficiency in mechanical tasks, such as entering the date and time into progress notes. A bigger challenge is to structure the e-MRS so that it can support rather than impede the humanistic aspects of the physician-patient interaction.

The e-MRS may be a particularly useful device as well to share and simultaneously track share of patient care information across sites of care for the patient, such as across the entire structure of health care networks, while simultaneously tracking that sharing for HIPAA and similar regulatory purposes. Sharing of information in the e-MRS certainly should be an important component of the electronic integration of future accountable care organizations, if they are indeed to function as integrated entities.



Efforts to develop the use of the e-MRS as a tool for patient centered care should embrace not just physicians and nurses, but also other clinical providers such as pharmacists.

Checklists and Surveys

In this section, the researchers comment briefly on two kinds of instruments which bear a close resemblance to questionnaires, but which in reality are something else altogether. First survey questionnaires will be considered and then checklist approaches.

Survey-type Questionnaires

According to Preece et.al (2010), we may distinguish between specific attitude scales which are applicable to a broad range of software systems and bespoke survey-type questionnaires to consider particular aspects of a system which are unique or possibly a small family of systems. Such survey-type questionnaires are not problematic when the questions seek information about things which are very clearly not a matter of individual interpretation, and indeed may be extremely helpful in finding out, for instance, patterns of usage. Preece et.al, (2010) give a good example of a straightforward survey questionnaire. However, when the questions begin to shade into matters which can be interpreted according to the individual judgment of the respondent, the questionnaire begins to take the form of an attitude questionnaire. All attitude questionnaires require several iterations of the cycle of item analysis, data gathering, and statistical analysis before



they can be used with confidence. A good recent example of a thoughtfully-developed questionnaire which is part-way between an attitude and a survey questionnaire is reported by Spenkelink et al. (2011). Their DES measures one specific aspect of a computer system -- the visual clarity of its displays -- and demonstrates high reliabilities for some of its scales over three independent studies. However, in general, the literature has many examples of one-cycle questionnaires, developed as the need arose, and usually characterized by low reliabilities, when these are actually cited. Very rarely are the statistical properties assessed with recourse to a second, independent sample. It would be invidious to point out any particular examples. Suffice to say that in general, standards of reviewing articles for publication are lax in many human factors journals when it comes to questionnaires. In addition, when one looks at the practices of human factors departments in the software industry, we find in general an equally gloomy picture. As Marc Chignell comments: Questionnaires are probably the most frequently used method of summative evaluation of user interfaces. However, questionnaires provide a subjective evaluation of interfaces which is often greatly influenced by the type of questions asked and the way in which the questions are phrased. (Chignell, 2010), which is precisely why a questionnaire in order to be useful, must be developed with care.) Saunders and Jones (2012) reported that 80% of companies they surveyed used some kind of questionnaire to measure user attitudes. Our personal experience would suggest that many of these instruments are



simply unknown quantities in terms of their reliabilities, possessing at most a spurious face validity: that is, they look good on the outside only. It is ridiculous to consider that a company may well spend literally millions of ECUs developing a system, and leave the end-user evaluation of this large investment to a weak and untested component of the development process. As Thimbleby (2010) asks: "why are so many commercial software products faulty? Because users simply don't get a proper chance to express their opinions.

Instrumentation

WAMMI stands for Website Analysis and Measurement Inventory. It is found on expertise gained from evaluating software for usability and International software standards. WAMMI measures user experience status of your website and provides you with a clearer understanding of the types of visitors that come to your site, why they visit it and how they think it can be improved. This service revolves around the 20 statement questionnaire and the international database. A digital report is generated at the end of the evaluation period.



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