Dental clinic computerize patient information system essay sample

Health & Medicine, Hospital

Introduction

In today's modern age where computer has become a way of life, it is evident that a majority of the country's institution still do not adopt the high technology. Particularly in most medical clinic facilities, daily clinic transactions are still done on paper. We all know that modern clinics are now operating a great pace striving to serve as many patients as possible with the best of their abilities. But as the years rolled by, the number of patients has grown and various medical cases arise that the manual method of managing patient's records.

In this study, we hope to developed a application that will minimize all paper works and manual records keeping, therefore allowing doctors and staff ease in keeping track of patients, reducing patients' waiting time and increasing the number of patients served a system that is fully automated, user-friendly, time effective and efficient. The project a mainly on generating patient information reports and providing them an efficient way of storing and getting information. The system is a solution for the in accuracies that are currently happening with the use of manual computations, not only for the dental clinic's bill, but also for the transactions with customer. This system will make use of the efficient task distribution for every employee without hustle not like before when they are using manual processes for resolving the work overload issue. The researchers created patient information management system to solve the problems of the client such as information loss, storage space problems, and security of information, evaluated thoroughly to meet the standards in making such a project and to give the dental clinic an efficient flow, storage and security information

through the use of patient information management system on their employees.

Background of the study

Now more than ever, people have become more health conscious and are takingnecessary steps to ensure that they have a sound body and mind that is whyeveryday many people come to clinics or health facility for check-ups and treatments. Amedical clinic is primarily devoted to the diagnosis and care of patients. Basically, patients spend a substantial amount of time in clinics waiting for services to be deliveredby the doctor or health professional. The degree to which the patients are satisfied withthe care received is relative not only to the doctors' expertise in their field, but also tothe quality of the clinic management. And we all know that as the number of patientscontinually increase, managing a clinic can also become increasingly difficult, especiallyif everything is done manually. The dental practice management system is similar to a dental records management system in terms of functionality and adds the ability to bill patients. It gives the dental clinic the opportunity to offer high and consistent levels of output quality, while improving their productivity through reduction of time consumed and cost. It enables this level of quality by ensuring data integrity and reduces time Conceptual Framework

Input – consists of information about the problems encountered in manual record system Process –The researchers will use the Visual Basic 6. 0 Programming Language and Microsoft Access for the database to be able to

meet the requirements of the proposed system. Output– it signifies the proposed " Patient Information Management System".

Statement of the problem

The main problem of the study is the manual system of record keeping and billing records in the clinic. The person tasked usually stores their records through index cards in a filing cabinet which happen to consume time and effort in organizing Specifically, this study aims to answer the following

1. What are the common problems encountered with the existing manualsystem of managing a clinic? 2. What are the possible solutions to the problems encountered with thecurrent system? 3. What is the difference between the manual system and the proposedsystem? 4. How to develop a system that will help in the clinic?

5. . How to test and improve the system?

Objectives of the Study

General Objective:

The general objective of this study is to design and develop a database that will serve as proposal to help doctors save time and resources with the automation of its daily clinic operations. Specific Objective:

1. To computerize records keeping of patients;

2. To allow doctors to retrieve complete patient history instantly;

Significance of the Study

Socio-economic significance. In this study, the proposed system will

inspireother students to develop an effective and efficient system.

Technological significance

The proposed system will introduce technology tothe medical clinics that are until now adapting the manual method of clinic management. The result of this study is beneficial to the following: Clinic

The proposed system will simplify and automate everyday clinic tasksand can help maximize time spent with clients thereby providing better service making itmore profitable. Doctors. The proposed system will make it easier for the doctors to manage theclinic and convenient when it comes to retrieving patient records. Doctor's staff.

Doctor's secretary and staff can benefit a lot from this study, asthey are an integral part of the whole clinic management. Patients.
Patients are the doctor's principal assets. And the reason why thisstudy is conducted is to provide a solution to doctors' need to better serve their patients. Future Researchers.
This will benefit other researchers who wish to have similar studies as they can get background information from the result of this study which wilserve as template to modify their research.

Scope and Delimitation
Patient information system covers the right way of recording information, retrieving, deleting and adding the information of the patient. This system allows the admin to secure the information by using a password, the

proponents limit the feature of thesystem to doctors and staff only. It has no network capabilities, this is not online program

Definition of Terms

Customer -A person that can receive services from the employees and agents. File – A receptacle that keeps loose objects such as papers or any collection of items. Record – A document that contains an account particularly in terms of collection. Services – Non-monetary programs provided by companies that benefits clients. Database – An integrated collection of data which provides amore efficient way of storage and retrieval of data and is capable of processing large portions of data immediately. Information – Is data that has been changed into a useful form of output. Process – A series of actions, changes, of functions that bring about an end or a result. Manual – Controlled or manipulated by a human operator (not automatically, such as by a computer) or powered by human or animal muscle power

System – A set of related components that produces specificresults. Technology. – It is the study of practical or industrial arts.

CHAPTER II

Review of Related Studies and Literature

The dissertation is informed by situation analysis of the Patient Information Management Systems with additional influences from a review of the literature as a secondary source of information. In this chapter, It presents

the theoretical focus relevant to the field research and interpretation in relation to the research approach. This theoretical focus, together with the research findings, make up the foundation for analysis and discussion of the research.

In order to analyze the use and management of information at local levels within the Patient Information Management System (PIMS), it needs a theoretical focus for approaching it. The theoretical focus aims at developing an understanding and knowledge around issues relating to PIMS operating in developing countries. The focus presented in this chapter is drawn from various writers on the existing HIS in developing countries, socio-cultural factors shaping the HIS, the role of Information and Communication Technologies (ICT) in health systems in developing countries, and decentralization of information management toward the district level as a way of restructuring the health information system in the broader processes of health sector reform.

The literature was reviewed in the following areas, in order to develop an understanding and knowledge around issues relating to Patient Information Management System (PIMS)in developing countries: PIMS in developing countries, socio-cultural factors shaping the PIMS. In order to gain an understanding of both the general themes of this thesis and the context of my case studies, the literature review prior to, during and after fieldwork. The literature review is based on the existing Patient Information Management System (PIMS) In developing countries, basing on the concept that, information systems cannot be understood independently of the people

around them; how people work and what kind of organizational practices they are engaged in. This means that, work practices that surround health data collection, data storage, data processing and analysis, data presentation and use, and information flows within and across the PIMS reflect the wider socio cultural and political-economic context in which they occur and are influenced by that context.

Local Studies and Literature

The current manual system that is being used widely in many patient information management system that makes the services received by patients are not so efficient and effective. Time wasting, loads of paperwork, filing, and a huge numbers of man power needed are few to be listed This list can be lessen if a computerized system is being implemented in this organization This is to make sure the service and treatment that all government's hospitals offer become more standard and have a good quality.

The used of patient information management system is not new in our country. Nowadays, a lot of private clinic have practice this sort of system . The used of patient information management system can make sure the flow of the service that they offer are efficient and effective towards patients.

This system is not so efficient because most of them are a standalone type of system . This system is capable mostly in registration process and billing, because most of these available systems are stand alone systems, so all data are not being updated on demand . People who work in the

administration need to key in new data everyday . These types of work process are not so efficient, because still the workloads are there, where the admin need to enter important data before the clinics operations are being closed for that day. Usually in patient information management system, clerk are responsible to handle the system, all registration process and payment of the clinic's bills from patients are done by clerk or registrar, from doctor's room, doctor can know either the patients in new to the clinic or the patients have received treatment before This sort of information can be retrieved from the system This way of working does reduce time waiting because doctors are prepared before they see the patients themselves.

In this section the research, location and analysis of the existing knowledge related to the subject of inquiry are explored and cited. It also sells at the relationship of the proposed research for purposes of good representation and critical review of the existing literature. Martin (1976) data within an organization is increasingly being regarded as a basic resource needed to run the organization. As with other basic resources, professional management and organization of data are needed. The importance of efficient use of data for planning, predicting and other functions will become so great in a computerized organization that it will have a major effect on growth and survival of co-operations. In relation to the above argument, the presence of an automated data management system in Nsambya hospital's efficiency, timely decisions and responses will be achieved.

For the last few years the hospital employees have been able to collect data from agents by providing them with a piece of paper with required fields to

fill. Its routine for every health worker to collect data, this should be processed and stored completely. They avail the right information and knowledge to the right person and institution in the form at the right time and place. The information ranges from individual patient reports to disease rebalance to mortality rate in the right persons and institutions which include the counties that use the health service, the service provider at local level, ministry of health and the donors.

The company's employees and patients are straining to process lots of policy documents every day. Integrating and streamlining policy 6 Application and document processes would ease administrative headaches for patients and greatly strengthen relationships with their customers Streveler (2004) grouped the component making HIS into 2 which are information processing and management. Information processing involves data collection, transmission, processing, analysis and presentation of information for use in patient care and health care management decisions. Health management system cannot exist alone but as functional unit aimed at improving the health of individuals and that of the community.

Pioneering secure on line Patient Record management and collaboration between doctors clinical and hospital using secured internet transmission according to Mennel (2006). In this project doctors are able to view patient medical records immediately at their private offices using secure internet transmission. The project aimed at increasing competitiveness of the medical profession by improving the accuracy of medical records and efficient retrieval and usage of medical records. Patient information

management system are very critical for doctors to establish their diagnosis, with detailed and on-hand patients" medical records; doctors can make appropriate medical decision efficiently. Security was a critical issue in the storage and transferring of patient medical records between hospitals and doctors" offices. All clients were authenticated with a 2 patient identity number.

The researchers consider providing the history and development of patient information management system valuable in presenting the study as basis for analysis and understanding of the profile of the patient information management system.

Foreign studies and Literature

Patient information management systems as elaborated by Annals. org (1993), although an area of active research, are not in widespread use. In June 1992, 3% of Dutch general practitioners had introduced computer-based patient records. Of these, 70% had replaced the paper patient record with a computer-based record to retrieve and record clinical data during consultations. Possible reasons for the use of computerized patient record system include the nature of Dutch general practice and the early and active role of professional organizations in recognizing the potential of computerized patient record system.

Professional organizations issued guidelines for information systems in general practice, evaluated available systems, and provided postgraduate training that prepares physicians to use the system. In addition, professional

organizations successfully urged the government to reimburse general practitioners part of the expenses related to the introduction of computerized patient record system. Patient information management system as elaborated by Alan Bingham (2008) in his book entitled " Healthcare Financial Management" is still a relatively new concept; however, such systems offer a variety of benefits to physician practices. It can help improve the quality care provided, for example, by providing real- time patient status reports, test results as soon as they are available, and graph and flow sheets of test trends. They can help reduce by eliminating many manual functions and the supply and staff expenses associated with these functions.

American Medical Informatics Association (1997) explained that patient record system is defined as a system that contains primary patient records by health care professionals while providing patient care services to review patient data or document with their own observations.

This chapter discusses information about topics related and mentioned in the study. It presents and provides gathered facts and ideas from related literatures like books, journals, magazines, and electronic sources. This chapter also presents brief discussion about related studies from locally made and foreign studies.

CHAPTER III

Research Method Used

Data Gathering Techniques

Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results. Observation – Observation of work performance is an excellent means of gathering data. Observations are usually done in conjunction with another data gathering method that is used to fill in the gaps and answer questions. Research This is the most common method used by the researchers. This is done by gathering information by using search engines in the internet.

Rapid Application Development (RAD)

It is software development Methodology that uses minimal planning in favor of rapid prototyping. The " planning" of software developed using RAD is interleaved with writing the software itself. The lack of extensive pre-planning generally allows software to be written much faster, and makes it easier to change requirements.

Figure2

1. Requirements Planning Phase

Combines elements of the system planning and systems analysis phases of the System Development Life Cycle (SDLC). It establishes an overview of them intended project and determines goals for the project. 2. User Design Phase

During the phase, users interact with systems analysts and develop models and prototypes that represent all system processes, input, and output. This

would include what the actual screens would look like rules, the coding and anything else that is needed to create the desired outcome. User Design is a continuous interactive process that allows users to understand, modify, and eventually approve a working model of that system that meets their needs. 3. Construction Phase

Focuses on program and application development task similar to the SDLC. In RAD, however, users continue to participate and can still suggest changes or improvements as actual screens or reports are development. Its tasks are programming and application development, coding, unit-integration and system testing. 4. Cutover Phase

Resembles the final tasks in the SDLC implementation phase, including data conversion, testing, changeover to the new system, and user training. Compared with traditional methods, the entire process is compressed. As a result, the new system is built, delivered, and placed in operation much sooner. Its tasks are data conversion, full-scale testing, system changeover, user training. SQL (Standard Query Language)

SQL or Structured Query Language is database computer language designed for the retrieval and management of data in relational database management systems. SQL is a standard interactive and programming language for querying and modifying data and managing databases. The core of SQL is formed by a command language that allows the retrieval, insertion, updating, ad deleting of data and performing management and administrative functions. The researchers apply SQL Statement in their

database language because it is capable of inserting, retrieving, updating and deleting data that is appropriate specifically when developing a Automated Payment System. DBMS (Database Management System)

A database management system or DBMS is computer software that manages databases. DBMS may use any of a variety of database models, such as the network model or relational model. In large system, a DBMS allows users and other software to store and retrieve data in a structured way. A DBMS is set of software program that controls the organizational, storage, management and retrieval of data in a database. DBMS are used to store, update, and retrieve a database. The DBMS accepts request for data from the application program and instructs operating system to transfer the appropriate data. Microsoft Access

Microsoft Access, also known as Microsoft Office Access, is a database management system from Microsoft that combines the relationalMicrosoft Jet Database Engine with a graphical user interface and software-development tools. It is a member of the Microsoft Office suite of applications, included in the Professional and higher editions or sold separately. Software developers and data architects can use Microsoft Access to develop application software, and " power users" can use it to build software applications. Like other Office applications, Access is supported by Visual Basic for Applications, an object-oriented programming language that can reference a variety of objects including DAO (Data Access Objects), ActiveX Data Objects, and many other ActiveX components. Visual objects used in forms and reports expose their methods and properties in the VBA programming

environment, and VBA code modules may declare and call Windows operating-system functions. Visual basic Studio 6. 0

Visual Basic is a programming language and development environment created by Microsoft. It is an extension of the BASIC programming language that combines BASIC functions and commands with visual controls. Visual Basic provides a graphical user interface GUI that allows the developer to drag and drop objects into the program as well as manually write program code. Visual Basic, also referred to as " VB," is designed to make software development easy and efficient, while still being powerful enough to create advanced programs. For example, the Visual Basic language is designed to be " human readable," which means the source code can be understood without requiring lots of comments. The Visual Basic program also includes features like " IntelliSense" and " Code Snippets," which automatically generate code for visual objects added by the programmer. Another feature, called " AutoCorrect," can debug the code while the program is running. Hardware

a. Input Device

Category

Specification

Keyboard

QWERTY Keyboard with 101 keys format

Mouse

b. Output Device

Category

Specification

Monitor

Supports by 600 and 1024 by 768 screen resolution with 60hz – 72hz screen

refresh rate

C. Others

Category

Specification

Memory

128 MB of Ram; 24x CDROM drive

Processor

Pentium3 or higher

Hard Disk

20 Gigabytes

Software

Category

Specification

Programming Language

Visual Basic 6. 0

Database

Microsoft Access 2007

Opearting System

Windows 7

Dataflow Diagram

A data flow diagram (DFD) is a graphical representation of the " flow" of data through an information system, modeling its process aspects. Often they are a preliminary step used to create an overview of the system which can laterbe elaborated. DFDs can also be used for the visualization of data processing (structured design). A DFD shows what kinds of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel (which is shown on a flowchart).

Data flow Diagram

Figure 1

In this form show the main screen of the software.

Figure 2

In this form you have to type the user name and the password to the textbox and click " CONFIRM' Figure

In this figure you are able to search the record of the patient easily just type the name of the patient on the textbox then click " SEARCH" , then to see the patient information you may click the " VIEW" button (figure 4) . It also have the add, edit, delete, and save button. Figure 4

In this form you will see the patient information

Gantt Chart

A Gantt chart is a type of bar chart, developed by Henry Gantt in the 1910s, that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements and summary elements comprise the work breakdown structure of the project. Modern Gantt charts also show the dependency (i. e. precedence network) relationships between activities. Gantt charts can be used to show current schedule status using percent-complete shadings and a vertical " TODAY" line as shown here.