**PHARMACY MANAGEMENT SYSTEM**

**CHAPTER I**

**Project Content**

Nowadays, technology is very important not only in student but also in the society. They learned a lot of things to explore and discover something new different from other system. Most of the institutions are using computer programs for communications and business transaction. New computer system is being developed and solve in every problem in the society. “Information Technology has been around because they believed that there is always a way of communicating through technology” (john beck).

The proponents are now making the system to make changes and think it is a big help to the community. With the use of the system it will help the community to minimize and the waste of time in finding where they could find or buy the medicine.

Pharmacy Management System help to make an easier and faster way of finding where to buy the medicine without thinking that if it is available or not on the pharmacy. We make a system between the doctor’s clinic and the pharmacy if there is a patient that would consult the doctor and the doctor will conduct a check up to the patient and get all the information of the patient and send it to all the nearest pharmacy within the Himamaylan City and check it if the prescribed medicine is in their drugstore, and when the patient’s will buy for the medicine he would just present his ID and no need for a medical prescription and the pharmacist would cater him and give the medicine he needs. To verify that the costumer is the one recommended by the doctor he would state all the information given by the doctor to the pharmacy and present its identification card (ID) to clearly verify all of the information that the was been given through the doctor. If the pharmacist already clarified it he would give the prescriptive medicine.

**General Objectives**

The main purpose of the system is to have an easier way of giving a good prescription to the user in guiding where is the prescribe medicine would have to be bought.

**Specific Objectives**

1. To have a good accommodation
2. To have a consumable time
3. To locate the place where he could find the medicine he/she needed

**Purpose and Description**

Pharmacy creates a big part in the life of a person needing a medication and supply of the person who got sick or have an illness. In giving a medication that suits for the patients health, it also been the partner of the doctor to become its source if the medicine is not on the doctors medicine storage.

**Features**

This system would develop a well-organized task to every patient that needs a good accommodation that able to create a better way in buying a medicine.

**Scope and Limitation**

The doctor can spread the information of the patient in all the pharmacy within the Himamaylan City. After spreading the information that has been given in all the pharmacy, the doctor will be informed by the pharmacy that the patient’s medicine is available or not in their drugstore. If there is no supply they could send back all the stocks that have been available and check again at another pharmacy.

**Significant of the Study**

The system provides for easily communication in all branches of the Pharmacy within the Himamaylan City. The benefits of this system are the following:

Doctor – send the information to the pharmacy

Pharmacy – response the doctors

Patient – needed the medication or the medicine

**Definition of Terms**

Computer based system – this is the server between the doctor and the pharmacy

Health Management system – the assistant of the doctor to identify what is the medicine needed by the patient.

Patient – the person needed the medicine/the one who wants to buy the medicine

Record – the list of information of the patient that has been gathered

System – a collection of components that work together to a common objective

**CHAPTER II**

**Background of the Study**

The Pharmacy Management System is now using a manual process in giving medicine prescription of the patient or the doctor’s which is consuming of time and it could be possibly misplace because it is only a written in a paper. The proponent to make this Pharmacy Management System is to improve their manual strategy which is the doctor can send the information of the patient to the nearest pharmacy and to minimize their problem regarding on managing on Pharmacy Management System. And base on the study Pharmacy Management System is a guide to help patient in finding the medication if were pharmacy had an available medicine and it is easier way on how they can manage their in buying the medicine that suitable for them.

**Foreign System Related Literature**

**Health Care Information System (HCIS) (2014)**

Davis and Yen (2014), in his study Information System is important for any business because the business needs to have accurate information and need to have the technology as a tool for solving problems and at the same time increasing the productivity and the quality of doing business. Businesses today use information system and use the available technologies because they understand the importance of maintaining and updating data electronically.

Health Care Information System have user interface, that provides to the system user the ability to interact with the patient. Once the patient arrive at the medical center they must register their information and health history in the health care center system.

The system automatically will update the patient information; then the patient will be under queue to have an appointment for medical check-up by the physician. The physician specify whether the patient case is an emergency case or not. If the case is an emergency, the physician will retrieve the relevant patient information from the system database. Nevertheless, in the general case, the system will request the examination queue for the patient. Finally, after the patient complete the medical check the system will place the prescription order to the pharmacy unit and update the information to the patient record. The focus of this system is to study the following areas towards the development of an integrated health care management system. Patient information history, which include all the patient information such as consultation history, medication history, treatments history, appointments doctors schedule information, which include the doctor schedule status such as (available, on leave, oversea, operation day etc.). Products, such as medicine information, which contains the products prices and the supplier for the product.

**Computerized Patient Record ( Arthur D. Little ) (2013)**

For the health care system, a computerized patient record that enables the electronic storage and retrieval of patient information, whether at home or in a medical center offers tremendous promise for both decreasing the cost and increasing the quality of care. A recent study Arthur D. Little estimate health care cost saving from electronic record keeping and electronic claims submission may reach nearly $40 billion per year. Simultaneously, quality of care, should improve due, at least in part, to increased availability of records and outcome-based research using cross-matching of longitudinal patient record.

This study explores technologies and policies to minimize threats and introduce by the use computer and communication technologies to the security of sensitive information contained in the medical record. The study assumes that the computerized patient record is implemented as a federation. One possible solution is proposed to the vulnerabilities posed by a utilizing a federated electronic infrastructure to share sensitive information between one or more institutional players in the health care community. The health care community is defined here to include patients, providers, payers, employers, and supporting organizations (The information on recent legislation to mandate the use of computerize patient record, see BRO93 and IOM92).

**Overview of Information Technology in Health Services in Ethiopia**

Health Management Information System (HMIS) in developing countries lags seriously behind as compared to the developed countries; and the existing HMIS in many countries is insufficient to support health management functions. The purpose of this study was to describe the implementation of Anti-retroviral Therapy (ART) pharmacy management information system in public health facilities. Quantitative, descriptive research was conducted at 38 public health facilities. The participants of the study were Pharmacists and Druggists those are working at ART Pharmacy. Data collection was done by using structure questionnaire. 76 respondents were recruited to participate in the study.

The participants ages ranged from 26-50 years and all had more than 2 years’ work experience. The study indicated that even if there is a system at most health facilities their utilization of information technology (IT) for pharmacy practice were not appreciated.

The findings indicated that the need for creating awareness among professionals in giving more skill oriented and also a formal in-service information technology related trainings for the professionals. To achieve better utilization of information technology at health care delivery system particularly pharmacy practice, government and stakeholder should consider capacity building activities through proper training and it should also viewed as a long term socio-cultural and technical development process.

**A pharmacy inventory management system in Saudi Arabia: a case study.**

The objective of this paper is to report on the preliminary findings of the implementation process of a pharmacy inventory management system at a local Saudi hospital. Meeting documents, key informant interviews, and experience of the researcher were part of the

data collection sources used in the study. A thematic analysis of the data was conducted. Preliminary findings show that the implementation process of the pharmacy inventory management system needs the involvement and support of senior management and experienced technical expertise. Future research will focus on investigating the impacts of the pharmacy inventory management system on workflow and medication errors.

In this paper, we present an overview of activities and results from a regional development project in Finland. The aim in this project was to analyze how healthcare providers produce and receive information on a patient’s medication, and to identify opportunities to improve the quality, effectiveness, availability and collaboration of social and healthcare services in relation to medication information. The project focused on the most important points in patient’s medication management such as home care and care transitions. In a regional development project, data was gathered by the interviews and multi professional workshop. The study revealed that medication information reached only some professionals and lay caregivers despite electronic patient record (EPR) systems and tools. Differences in work processes related to medication reconciliation and information management were discussed in the group meeting and were regarded as a considerable risk for a patient’s safety.

**Pharmacy Information System**

An information system is a set of interrelated components tha collect, manipulate, store and disseminate data and information and provide a feedback mechanism to meet an objective. We interact with information systems everyday both personally and professionally. Knowing the potential of information systems and putting this knowledge to work can result in a successful career, organizations that reach their goals, and a society with a higher quality of life.

Pharmacy information system has the advantage of providing functions such as medication dispending, inventory control, billing of medication, drug information provision, and drug interactions notifications. Another promising point that can reduce

the above mentioned challenges is that strong government interest to strengthen the Ethiopian health information system can be considered as one opportunity for future development. Accordingly, the government of Ethiopia has recently embarked on a project to network all regions and woredas using a combination of fiber, microwave, rapidly. This is expected to contribute to better communication and information wireless, and satellite technologies, while at the same time, expanding the mobile network system including health information.

**Local Study Literature**

**Pharmacy Inventory System**

Rose Pharmacy is one of the Philippines top pharmaceutical retailers with over 183 branches it was established in 1952 in Cebu City with the customer being the centerpiece of its corporate plans, Rose Pharmacy has streamlined its branch operation by installing advance point f sales system in all branches thereby providing not only fast and efficient computerized service but also accurate accounting and inventory monitoring rose pharmacy’s also enhance customer service thru online product inquiry and ordering and other online services.

**Pharmacy Inventory Tracking System**

Healthcare industries today are looking for the opportunities to improve their daily operations efficiencies by reducing cost without effecting patient care. In addition for these industries to function better they required accurate medical supply an equipment

orders, tailored to the patient needs and deliver in time inventory is a subject in business that is hope can minimize profit. However, in case inventory has turn into a major cash flow constraint that cause necessary to optimized inventory using analytical and statiscal methods in manual approach that using papers. This will lead to paper wastage. In healthcare industries, inventory management system can handle there inventory especially in pharmacy department. This include all the activities that run in pharmacy such as transaction, order items, items movement tracking, and generate report.

**Pharmacy Management Project for Health and Medicine**

Nowadays, information and communication technology (ICT) plays a great role in different fields or areas among thus Health care system belong to this. This leads to various studies and researches being conducted to selected health care facilities. It is necessary to ensure a technologically appropriate, equitable, affordable, efficient, and environmentally adaptable and consumer friendly system, designed to fully utilize the ICT for the maximum benefit in the health care industry. Regardless of the type of business you run, you will need a management system of some description. Within the pharmacology industry, however, this is even more important. Without adequate pharmacy management, people could get the wrong medication or medication in the wrong dosage, or it could be unclear whether or not they are receiving too much medication. These are highly complex computer systems. These are designed to ensure any pharmacy department, be that in a hospital, retail or online, is able to have all their needs met. By using a pharmacy management system, a pharmacy manager or a pharmacist is able to have input on how medication is used in a pharmacy, as well as supervising the dispensation of medication.

**CHAPTER III**

**RESEARCH DESIGN AND METHODOLOGY**

This chapter presents the research design and methodology of the proponents system.

**Methodology**

In this chapter presents about the research methodology for how the system will be develop by gathering information to serve as the foundation of the system, the discussion about analysis, quick design, the process on the prototype cycle that take place, and lastly, the testing and implementation of the prototype system.

**Project Development**

In this system analysis and design the proponents use Rapid Application Development (RAD). RAD describes a method of software development which heavily emphasis rapid prototyping. This may also help us to know of what are the procedures that are going to use in developing our system. Design and Methodology stress the use of brainstorming to come with the idea and arrive at the best solution. The main concern of design and methodology are the needs and wants of the end user.

Testing

Implementation

Analysis

Quick Design

Refine

Build

Demonstrate

Figure 1: Rapid Application Development (RAD)

Figure 1 shows the Rapid Application Development diagram illustrate how the reasearch and the process is being implement during the start of the process until it has been finished. Rapid Application Development is easy to use as a methodology; the diagram shows the step by step so that the problems might encountered can be polished by reviewing every step. In RAD, the functions are developed as the prototype is being

integrated to make the complete process quicker, it make it easier to incorporate and understand the changes within the development. The advantage of RAD model from the other methodologies is that it can consume your time to implement the system.

**Analysis**

In analysis, the proponents conduct series of research and interviews in the doctor’s clinic, and observe the manual writing of prescribe medication of the patient and also they conduct interview to the pharmacy where the patient is going to buy. The proponents gathered some of the data and information from the doctor’s clinic and the pharmacy. The doctor is manually giving a prescribed medicine to the patient, and it will serve to the

pharmacy that it is the medicine prescribred by the doctor and the pharmacist will look or find it at their medicines storage one by one.

**Planning**

After conducting an interview and with gathered, the proponents start a plan on how they going to start the system making. The proponents use the information and the data that they gathered from the doctor’s clinic and the pharmacy during the interview in order to make an ease of access, can obtain accuracy, and lessen the time consuming process of checking or finding where the medicine is available.

**Quick Design**

The system design should be a user friendly so that the user can easily access the system and follow the process on how to use the system. First, the proponents just create a sample design and consult to the client if there have a suggestion to the design in order to provide by the proponents.

**Prototyping**

In prototyping process have the following processes also:

• Build

In this phase, the proponents will use the information gathered to create an efficient and user friendly interface. By the use of development tools were going to start to create the structure and function of the system. The proponent will also do the coding so that the

proponent can test ifthere is some instance that will be polished or errors that might be encounterd.

• Demonstrate

After designing, the prototype of the system should be demonstrating to the user on how the process in using the system so that they can easily manage and know how to use it.

**Testing**

This phase involves the testing of the system if it’s already functional and meets their desired requirements of the end-user.

**Implementation**

After the testing, implementation of the system follows, during this phase the proponents system will be installed in the production process; the user will be trained or will be guided on how the system works.

**Architectural Diagram Interface of Hardware**

Architectural Diagram shows the process of the interaction between the user and the hardware.

Figure 1: Architectural Diagram of Pharmacy Management System

3.Pharmacy

2.Admin

1.Client

Figure 2. Architectural diagram shows the system’s process,starts with the admin,the admin will log in his/her account information, then the inventory data that being stored in the database will be viewed easily by the admin.

**System Testing and Implementation**

As every step is done an in order to prove that the system is really reliable. In producing of information given by the system, this shouod be tested so that the user or the proponent will see if it is effective in terms of its purpose and uses so the user can make him/her satisfy. We select some of the students to act as the admin so that we can visualize if the process is correct as well as storing of data during the inventory. The system is only designed to provide the needs of the patient and also to make the process easy and accurate.

**Recommended Hardware Specification (Server/Workstation)**

For pharmacy management system is develops and runin a perfect functions, but first the client must implement the following hardware specifications:

•Microsoft Windows 7 Professional/Windows 8

•4GB, 64-bit Processor

•500 Gigabyte Hard Drive

•Intel Core i3 or Equivalent

•Mouse and Keyboard

•Printer

•Monitor

•40 Gigabytes Hard Drive (for backup)

**Recommended Software Specification (Server/Workstation)**

•Java

•MySQL Apache

•HeidiSQL

•Windows Server 2008 Enterprise Edition

Data Flow Diagram sambilad starlene laway2

Ask for medicine

Provide name of medicine

Patient

Provide name of pharmacy

System access

check-up

findings

System access

inform

name of medicine

Medicine name

name

confirm

consult

confirm

confirm

Find availability

Log-in

doctor

consultation

Pharmacy

**Use Case Diagram**