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| *We-Care Patient Management System* |
| Project Proposal |
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Introduction

# Purpose

The proposed software is a patient management system, which is used to ***store and retrieve patient details***, that would help the doctor to ***trace back*** on the patient’s past medical history, in a comprehensive manner , ***at any given time***, while reducing his tasks and helping him to come to a diagnose more quickly. The software would brings efficiency to the on-going medical procedures in Sri Lankan hospitals.

The system works to its full potential when its installed in multiple hospitals/clinics across the country where a patient in its database can enter any hospital in any part of the country and receive medical care, according to his previous medical conditions and records since he is in the patient database.

Scenario:

* Patient Receives Medical Treatment for a Heart Condition from a Hospital in Galle.
* The System stores the Patient Details and the Treatments/ Procedures Underwent.

Galle

8 Years Ago

* Patient rushed into a hospital in Colombo after a Car Accident.
* All of patient’s past medical proceedings can be obtained from the System.

Calle

8 Years Later

# The software is to be used in

* Hospitals
  + Medicine Department
  + Surgery Department
  + Obstetrics and Gynaecology Department
  + Paediatrics Department
* Clinics
* Pathology labs

# Objectives

* Bring Efficiency to the Current Procedures
* Reduce the Wastage of Hospital Resources
* Organized and Comprehensive Patient Details

# Main Characteristics of the System

* + Patient Details Database
  + Patient’s Ongoing Investigations (Biopsy Reports, CT Scans, etc.)
  + Hereditary Disease Detection
  + Patient Reminder System
  + Blood Donor Database
  + Epidemic/Infectious Disease Warning System

# Technologies to Be Used

* Database Design (Oracle Database 10g)
* Coding (Java 6.0)
* Testing (Java 6.0)

# [Millennium Development Goals](http://www.un.org/millenniumgoals) that covers from this Project.

The United Nations has identified some of the world's toughest problems in its [**Millennium Development Goals**](http://www.un.org/millenniumgoals/)**.** In order to achieve these goals, we are proposing to develop a Patient Data Handling and Management System that covers three millennium development goals, which are related to the medical field.

* Combating widespread diseases
* Improving maternal health
* Reducing child mortality

Specially in Sri Lanka, the country has a poor patient data handling system, where everything is written by hand and stored in a file somewhere inside a store room. This results in low effectiveness when it comes data retrieving and patient history management, which would lead to making wrong decisions about the patient which might ultimately end up causing the patient to die.

## Combating Widespread Diseases.

In time of epidemics (Eg: Dengue, etc.) in certain areas of the country (Eg: Mt. Lavinia), our system acts as an Epidemic/Infectious Disease Warning system, where it takes the addresses of patients in to account and cross reference it with the disease spread area, and immediately sends out a mass alert to their mobile phones, with details regarding the disease, its prevention methods, as well as clinic hours where people can come for check up’s if they are willing to. This spreads out awareness of the disease among the people, helping to combat the disease more accurately, and efficiently, and preventing it from spreading further more.

## Improving Maternal Health & Reducing Child Mortality

The system’s comprehensive patient details and history helps to maintain maternal health while the Patient Reminder System provides reminders specially to pregnant women about their diets and pills (Eg: Folic Acid, etc.) that are needed to take for a healthy child birth. The new born baby will be immediately added to the system and given a profile of his/her own, which helps the doctor to monitor and observe the baby carefully throughout the first year.

Overall Description

# Detailed Look into the Main Characteristics of the System

The following will provide an insight into the software’s main characteristics.

## Patient Details Database

Patient Details will be recorded under these categories

1. Patient’s Basic Details

Name, Birthday, Age, Address, Blood Type, etc.

1. Presenting Complaint with the Date of Admission
2. History of Presenting Complaint
3. Systemic Review of the Patient
4. Past Medical History (Eg: Diabetes, Bronchial Asthma, Hyper Tension, etc.)
5. Drug History
6. Past Surgical History
7. Family History
8. Allergic History
9. Social History (Eg: Smoking, Alcohol, etc.)

## Patient’s Ongoing Investigations

The reports/tests/scans that are requested by the doctor and handled by the pathologists/laboratory staff will be displayed in the patient’s profile once they are completed, for the doctor to review. The reports/ scan results that are still in the observing and analyzing stage are recorded as “Pending”.

## Hereditary Disease Detection

The patient’s immediate family members (Father, Mother, Siblings) profile’s are connected with the patient’s profile so that hereditary disease complications that are shown in their details will be automatically detected and is shown in patient’s profile indicating that patient’s presenting complaint **might have** a connection to his father or mother’s hereditary disease.

\*Important: This doesn’t indicate that the patient was actually diagnosed with the disease, this functionality is merely there to point out the possibility of this patient having that particular hereditary disease.

**Mother**

* Blood Pressure

**Father**

* Diabetes

**Son**

* Diabetes
* Blood Pressure

## Patient Reminder System

When doctor makes a request for CT Scan or a Biopsy Report of a patient, most of the time, lab scans and tests are scheduled, 3-4 days afterwards. The laboratory staff checks their schedules and inform the possible date of the test to the patient. Our system is proposed to design in a way when the lab staff decided the scheduled date and enter it to the database, a Reminder is send out to the patient’s mobile phone, informing him the date that he should be present at the Lab.

This system is also used to inform pregnant women of their diets, and pills(Eg: Folic Acid, etc.) that are needed to take, in order to have a healthy baby.

## Blood Donor Database

Each person has a blood type, and this is entered when he/she is registered in the patient database, and a question of whether he/she would like to act as a blood donor in time of another man’s needs, is asked. If the patient is willing, he is assigned as a possible blood donor for future purposes (This is done after a thorough check up on his patient details and on-going illnesses. Eg: HIV patients **are not** eligible for this procedure). Afterwards, if a patient is in need of an emergency blood transfusion, our system can identify possible blood donors of the same blood type who are nearest to the hospital.

## Epidemic/Infectious Disease Warning System

When an epidemic disease is spread out in an certain area, the system identifies the patients that are living in the same area(through their address details) and sends out a mass alert to their mobile phones, with details regarding the disease, its prevention methods, as well as clinic hours where people can come for check up’s if they are willing to.

# Benefits

We have discussed with current medical personnel and gathered information about the current medical procedures in Sri Lanka. The following scenarios are a comprehensive look into some of the biggest issues in patient management, as we have identified.

Scenario 1:

Presently, most of the patient data handling procedures in Sri Lanka are done in a manual way, where the patient details which are recorded by the doctor himself is stored in a specific file given to each patient. This patient file is named as the Bed Head Ticket or the BHT. All of these files are stored in a store room in the hospital and case works which are older than five years are removed and burnt later on. Hence, there will be no recollection of patient’s details no more than five years old.

When the system is installed, after a patients initial visit, all his details are entered to the system, can be viewed anytime, and doctors need not to ask for his/her details again if they checks in at the hospital 5-6 years later. The doctor can view the patient’s details as well as, all of his past medical proceedings and start treating his presenting complaint immediately, very effectively. This saves up a lot of time for the doctor.

Scenario 2:

When the doctor requests for a Scan or test results of a patient (Eg: TSH report, Biopsy Scan), it usually takes 3-4 days for the laboratory staff, to go through and analyze the test results. While this is happening, sometimes another doctor examines the patient as well, and seeing as there is no indication of the above mentioned test results in the BHT, the second doctor again requests for the same test results. Hence the test is carried out for a second time, unknowingly.

After the system is installed, whenever the doctor requests a test, that specific test results are listed as “Pending” in our system by the laboratory staff.

Scenario 3:

Sometimes patients are admitted in an unconscious state (after an accident), or doesn’t recall some of the past medical proceedings he underwent. Not knowing these information, could cause fatal mistakes, whenever the patient is under the surgery knife or under any treatment procedures.

After the system is installed, the details and total past medical proceedings can be viewed by the doctor even in cases like the ones which are mentioned above.

There are countless other scenarios, that would benefit from this system. The main ones we have identified are as follows.

* Comprehensive Patient Database
* Data stored in an organized manner
* Efficient Data Retrieval Method
* Space and Time Saving
* Reduce wastage of government resources

Reference

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