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MOBILE BASED PRIMARY HEALTH CARE MANAGEMENT SYSTEM

A.Tamilendhi, B.Tech., Dept of IT, SKP Engineering College, Thiruvannamalai.

ABSTRACT

The technology of mobiles are growing increasingly in developing countries like india. There have been several new researches and developments in this space.Now a days,The rapid advancement in the technologies,ease of use and the falling costs of devices,make the mobile an appropriate and adaptable tool to bridge the digital divide.The low-cost mobile phones availability and he already broad coverage of GSM networks in india is a huge opportunity to provide services that would trigger development and improve people lives. Mobile health care provision in the home environment presents many challenges. It is a term used for the practice of medicine and public health supported by mobile devices. In mobile communication devices such as mobile phones,tablet & computer PDAs it is a most commonly used reference in emergencies. Health Care is very important factor in life,may be due to unexpected changes in health may causes some health problem in our daily life like sudden heart attack or occurrence of accidents,due to sudden occurrence of problem in health it may leads to serious conditions. In such situations the problem has to solved quickly and without any loss of life. To reduce this problem our paper is going to present a topic called ”Application for Health care in mobile devices”.The mobile application we have attempted to build will require connecting to the internet through GPRS(General Packet Radio Service)and track the location of user once the message from the user received its need not to note the location of user by getting address .After tracking the location of user, its is informed to the health centers which is near to that location received. Then the service will be provided to them by nearby health centers.

KeyWords: Mobile Healthcare system, Healthcare applications, GPRS(location tracking)

1. INTRODUCTION

“Mobile based primary Health care Management System” will capture of complete information related to an individual patient treated by a PHC. The software components under development are patient Database management, Interaction between doctor and a patient, capture of Medical data acquisition such as ECG ,images of heart and ling, eye etc and scheduling management. The project involves development of the following:

A web based Information system for Management of primary health care.

- ✓ SMS interface for integrating SMS messages from the patients using 2nd Generation mobile systems(GSM/CDMA) with the Information System.

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- ✓ WAP gateway for web access Applications using WML for integrating GPRS/3G/4G Mobile devices of doctor and nurses with the webserver
- ✓ After getting the SMS message URGENT from the patient, the location of the user will be tracked using GPRS in the webserver
- ✓ GPRS with the internet connection will track the current location of user by the message received.
- ✓ The current location of user will be informed to the nearby health centers by message
- ✓ Development of localization support to national and other Indian languages in mobiles by providing interface for translation.

2. PROPOSED SYSTEM

A Central repository of Primary Health Center management System with a Web interface is proposed to be developed in an Open source database. An SMS based interface to the Web is planned to be added for integrating with 2G(GSM/CDMA) telephones, since mobiles have penetrated overwhelmingly in rural India. A WAP web Gate way will be developed for integrating with a GPRS/3G mobile devices, which are expected to be used by Doctors and Health Assistants. In the user sends the "**URGENT"** message to **1100.**This will be sent to GPRS systems, the Web request from the phone is first served by the WAP gateway server. The gateway server translates mobile phone requests (WAP) into HTTP requests and sends them to web server. The Web server processes the requests and sends WML to gateway server, which in turn sends the WML to phone in the binary compressed WML format. The Primary Health Care Server, having the information system can be accessed through mobiles with GPRS connectivity. It's also having database to store the information of user details. The GPRS then track the current location of the user which received a message. The current location will be informed by a message to the nearby health centers. They will provide the services immediately to the users. This will help to solve the loss of human life due to improper connection with the health centers.

3. PROJECT MODULE

- ➢ User
- ➢ Mobile devices
- ➢ Message ***"URGENT"***
- ➢ WAP Gateway
- ➢ Server
- ➢ Database
- ➢ GPRS with net connection
- ➢ Tracking current location of user
- ➢ Send message of current location to near by health centers
- ➢ Providing services

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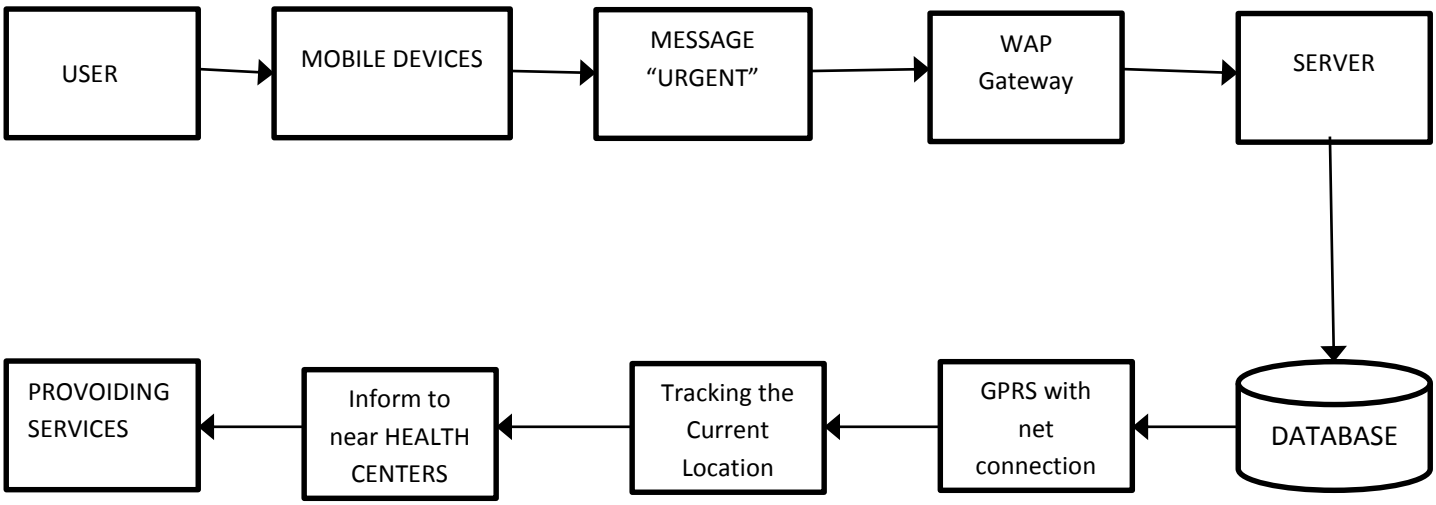
PROJECT OVERVIEW



Security Issues in Mobile HealthCare Applications

Attackers exploit weakness in application design and development to gain access to sensitive data for malicious purposes. Some of the vulnerable areas include:

Po or authentication and authorized:

Weak login credentials, the lack of strong authentication controls, and authorization flaws make it easy for attackers to gain access to the target systems. Once they gain, the attackers can retrieve e-PHI records in an unauthorized manner.

Insecure data storage or broken cryptography:

Storage of sensitive data by the client in plain text in database or file, or weak encryption of data, exposes it to exposes it to various exploit vectors. The uses of weak encryption algorithms that are known to be broken or customized algorithms with insecure key generation and management can impact confidentially of the data stored by applications.

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Man-in-the-middle attack:

Sensitive data sent over a network in plain text or faulty implementation of Secure Sockets Layer [SSL] can be easily intercepted, and is susceptible to attack vectors such as data tampering man-in-the-middle attack.

Client side injection attack:

Structured Query Language [SQL] injection through the input field could help the attacker gain access to patient data. The technique could also enable the hacker to alter the data in a manner not intended by the application or even steal the entire database .medical identify thefts can be used by criminal entities to raise fraudulent claims with health insurance companies.

HIPAA Security standards:

HIPAA security standards that address application security issues are listed below. however this is not a comprehend sivelistand each organization needs to conduct an analysis to incorporate regularity controls. The standards are categorized as 'addressable' and 'required'. while the 'required' specifications are mandatory, The 'addressable' specifications are not optional and permit healthcare organizations _referred to as covered entities to determine whether the guideless reasonable and appropriate for themselves.

Required standards mandated by HIPAA security rules for application security:

- Unique user identification
- Emergency access procedure
- Audit controls to record and examine access and other activity in information systems that contain or use e-PHI
- Person or entity authentication **addressable standards:**
- Automatic logoff to terminate a session after a predetermined time of activity.
-

4. LITERATURE SURVEY

The mobile healthcare system survey is based on four categories these are:

- Based on smartphone
- Based on multimedia
- Based on wireless communication
- Based on secure and privacy

Smartphone Based on Healthcare System

Alerts in Mobile Healthcare Applications:

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To deliver an alert signal to the appropriate person at the appropriate time introducing a system called as urgent are referred to as alerts. Alerts have a broader coverage than alarms, which refer only to *critical events.* Most medical alarms have to be handled within a time period.so they propose the use of a healthcare alert management system to handle these alert message systematically. The existing practice tends to use cellular phones and pagers for communications. To take advantage of the anyplace and anytime characteristics of mobile computing environment, they propose the use of *healthcare alert management system*[HAMS].

Wireless Communication

This paper deals with the wireless communication in health care system.

Wireless Health Care Service System

In this paper, Satellite positioning, Wireless communication, and information processing are integrated to develop a wireless emergency health care system for the elderly persons with dementia in a real health care environment.

To integrate the technologies of radio frequency identification(RFID),GPS, GSM, and GIS to construct a starry prevention system for the elderly person suffering from dementia that does not interface with the elders" daily lives and problems specific to dementia include memory impairments ,behavioral problems, other mental symptoms and patients" inability to take care of themselves. Due to the problem of memory loss, the elderly with dementia are manpowered way of searching the missing patients with the help of GPS and GSM Schemes. This system provides four monitoring schemes, including indoor residence monitoring, outdoor activity emergency rescue and remote monitoring modes. The user interface design allows family members or other caretakers to identify the real-time positions of the missing elderly persons using mobile phones ,PDAs, Notebook PCs and various mobile devices through a health care platform consisting of a web service server, database server, message controller sever and health-GIS(HGIS)server.

CONCLUSION

The primary health care can be made transparent and easily accessible by the implementation of "Mobile based primary Health Care Management System" .In this paper the subsystems of the proposed system have been brought out to helps a human in every instant part of his to overcome from dangerous health problem. This application in mobile will improve the efficient use of health center services. Tracking technology helps the centers to reach the location exactly and faster. Similar applications can be used to create different applications or different purposes as well as enchanting the features of existing applications. Since internet has become an integral part of urban society its easy availability and

sometimes also free access further eases the task of location tracking and strong it on a remote database through internet.

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