A CONCEPTUAL PAPER ON SOFTWARE PLATFORM DEVELOPMENT TO ACHIEVE HEALTH MANAGEMENT

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Abstract- This paper aims to develop the architectural framework of software development on web services and integrate with communication technology. Proliferation of communication tools improves the standard of delivering healthcare to all section of people. Development of software on cloud environment and deploying the same in mobile platform to enhance the delivery of health care services. The conceptual layer develops the ontology section where the exchange of data and communication layer defines web services. TB is one of the deadly disease hampers India's potential in achieving full healthcare to wider section of the people. It also weakens the country development agenda on human development index. The proposed framework here address this issue and bring out the possibility of real time implementation in achieving health care management in Tuberculosis. The integration of system architecture with mobile technology enables to facilitate frequent flow of communication for all stakeholders in this process and subsequently achieve overall strategy.

Key words: Mobile technology, Software architecture, Health Management, Telemedicine

I.INTRODUCTION

The important issue in achieving health management in TB is the long period of tablet consumption. Majority of the patients used to stop the tablet intake once they feel better and symptom is absent. To get complete recovery, it's advisable to finish the complete lifecycle of ranging from three or six or one year. This period is based on severity of the disease. The long period of table intake will definite be the challenge to the various interested parties like doctors, patients, government policies and entire society. The patient should realise the importance of table intake and should co-operate. Modern technology like web platform and communication technology will help to achieve the effective health care management in the TB scenario. European Union has this as the central theme in health strategy. WHO is also supporting this activity**.**

In the given situation, it's noteworthy to take the help of telemonitoring and its one of the suitable self-care management tools and the platform is information and communication technology. The exchange of data between health care stakeholders and patients are achieved through these well versed mechanisms. The patients will be monitored continuously and advice will be given frequently. In this concept the patients become the central theme and other activities are revolved around them.

The interchange of data within patient and doctors will enable to monitor the daily activity of patients at large. Remote monitoring is the key concept in this case and it indirectly avoids physical movement of patients and also eco-friendly. Cost effective and energy effective are the two key factors in this capacity. Development of information and mobile technology makes this possible mechanism and help to monitor patient and to achieve growth in the healthcare portfolio. On another view, enabling of this technology will help to reduce pollution developed by vehicles and this is also a very cost effective way of managing patients. Connectivity is based on two nodes like home site and health care site respectively. These two nodes are integrated to make as entire system in seeing the patient's progress. Data will be acquired through the use of MDs along with feedback from patients and later it is collected in a device called HG. This device is used to analyse or transmit the acquired data outside the patient's home.

The health care site will be monitored by a server device from the home site. This system will help the doctors to manage the data and the data will be stored in a central server according to the defined protocols. There are more research activities are developed in this field but still there are wider scope to develop in this area. The electronic health care management has a long way to go and there are lot of benefits can be derived from this field of activity. The technology should be developed further and need to be taken to next level of activity.

The major challenge in this technology development are interoperability and integration. These two issues are to be addressed by making free flow of communication between various heterogeneous health entities. Exchange of data through secured communication channel is the major development in achieving efficiency. The other development in this technology is providing personalized health care services to an individual.

II. DEVELOPMENT OF PROJECT MODULE

The patients have to enroll for the web site to get the ID number to approach a doctor. After obtaining the patientID then the doctor need to receive the medical details of a patient. The doctor will recommends patients for the required tablets during a regular basis and also the web site can prepare a chart for the patients according to the details given by them. The patients will provide a SMS through the e-mail communication to the doctors by signing them web site or messaging them. The location may also offer immediate remedies to create a right away action. This also sends the reminder SMS to patients and it will pop up in their mobile phone, the patient have to click yes or no according to the option is present into the system, then the reply will be recorded in the hospital monitoring system and the database. This will help to keep online record of the patient daily intake of medicine. On the other way it avoids patient overflow to the hospital and reduce the cost often like in DOTS system. The nodal agency (Central Monitoring Office) can view their system to know the patient daily updates and can advice the patient accordingly. SMS will be shared to care taker or village health advisor mobile number if the patient is not replying to the initial SMS and this is

happening at half an hour interval. The continuous SMS is to ensure the patient to take the medicine properly. This mobile communication will also alert the patients by periodic checkups and new drug discovery activities etc. It's also helping a lot in education and research process.

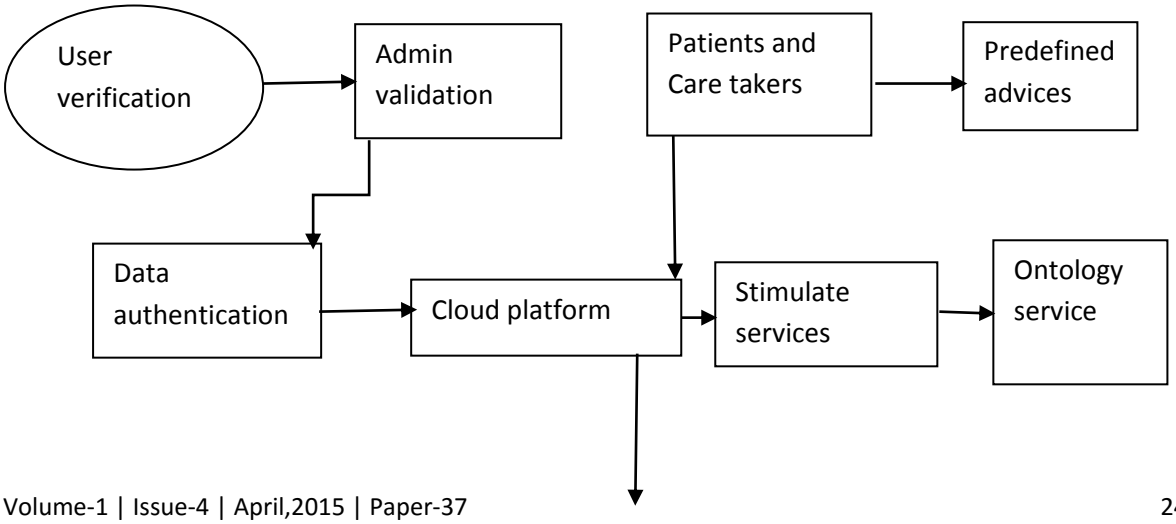
Whether it's a feature phone or smart phone, anyone can avail these monitoring services. The centrally stored database exchange platform will stored all the data exchanged between patients and the nodal agency. If the patient is not responding to any of the SMS, then at the end of the day the concern person will call the patient and remind him about the daily dosage intake. This system will also keep tab on inventory management ie; the daily tablets needed for a patient and when it will go out of stock. The days and dosages will be synchronized so that the inventory management (patient tablet stock in his/her hand) will be achieved in this system. If the amount of tablets going to drain soon, then alert SMS will be sent to patients to collect the routine tablets from any of the DOTS centre or TB sanatorium.

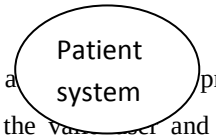
Database in the hospital system can be visualized via excel sheet and the sheet contain details like doctor official phone number, patient phone number, tablet intake details, tablet stock, last date of health check up and next due of health check up for the patient. Doctor or technician can login in to this software and view the entire details pertaining to the patient monitoring. The software also link with warehouse of the hospital, if the level of tablet stock goes down after the threshold limit then it will alert the main warehouse in the district accordingly to do replenishment.

III. EXISTING SYSTEM

This system is largely useful for Tele observation patients from home web site for perceptive chronic diseases. It's the mix of ontology, rules, internet services and automatic computing paradigm to manage knowledge. The primary advantage of the system reducing prices and avoiding hospital overflows. Observe the patients conditions by the technique referred to as DOTS and update them health conditions often. This approach was introduced by World Health Organization (WHO) for chronic diseases. This provides you the small print of information illustration, advancement organization, and self-management capabilities to the system. Low information measure value is needed to transfer management profile and management result.

IV. CONCEPTUAL FRAMEWORK OF TB SYSTEM ARCHITECTURE





The ontology will create the service repositories a provide the services to the requested parties. The first and foremost step is to authenticate the valid user and it validates that the user is an admin. If authentication is successful then the admin can able to create the service repositories. After the service repositories have been created then the services are distributed to the admin who acquire the repositories .In order to enable the normal user to make use of the offered services. In this current proposal we advocate autosuggestion and medical aid distribution. Though the service is stimulated by a user, the request hits the patient monitoring hosts. The medical team members could respond back to the request immediately. All this method can work on a simultaneous manner in order that the flow of communication is channelized properly to bring the efficient system.

V. CHALLENGES IN HEALTHCARE MANAGEMENT

TB is the real concern in creating nation like India. As indicated by WHO (World Health Organization) 2.2 million cases is enlisted in India, while 8.7 million cases influenced with TB illness. We examine this area in two sections. The illustration we taken to depict the segment is from bio drug. Utilizing of ICT innovation serves to battle illnesses and this is the marvellous limit of this innovation. IT applications in health awareness convey radical changes and it makes to convey quality social insurance practices to the remote populace. Interfacing in the middle of correspondence and programming innovation is one of the fundamental difficulties in conveying quality human services. Increase of medicinal services cost because of maturing populace in creating nations as referred to by OECD (association for monetary co-operation and improvement.

ICT (Information and correspondence Technology) is the significant devices in conveying quality wellbeing administrations to remote populace. It is conveying proficiency to the entire framework it works. Specialized base like Email, SMS, Voice calls, programming structural planning, Mobile correspondence, DBMS (Database Management System) are all expected to execute the undertaking in a productive way. The SMS can be seen in any customary telephone and additionally in cell phone. Occasional redesigns will be sent to the customers. Conveying attention to the patients can be attained to through SMS and additionally pre-recorded voice calls.

Due to poor monetary condition of the patient they are not able to travel frequently to take pharmaceuticals so joining them with this stage will urge them to take drugs continuously. Currently telemedicine arrangements are utilized to remotely screen key signs, for example, pulse and glucose levels. These frameworks limit the versatility of the patient, notwithstanding being constrained in the quantity of fundamental signs that they bolster. The quick improvements in web administrations coupled with the progressions in even remote access innovations have made web benefits an inexorably appealing stage for conveying remote patient wellbeing observing administrations. This task exhibits the ability of web administrations to give ease, and productive remote wellbeing observing through Web administrations based methodology. The proposed methodology demonstrates a nimble, adaptable, interoperable, and conservative different option for existing remote wellbeing observing frameworks.

VI. CONCLUSION

This paper devise a conceptual framework to effectively achieve remote health care management using various platforms like web services and mobile technology. Patient is the central theme of this research framework and enable doctors to view data in a computer. The website interface is the key function of this framework and help to achieve the larger goal in health care management. The opportunity made conceivable by the advancement of our preparatory evidence of-idea model urges us to actualize the framework, all things considered, and get criticism from wellbeing experts and patients. A prototype is also developed to show this potential concept in practical implementation.

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