PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF-RELIANT

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ABTRACT — There are many people around us who are the victims of chronic disease. Most of them suffering from dementia. Some people overlook to take care of health. Because of the lack of an expert system, people are forced to submit in frequent health related problems. By analyzing the data, an internet of things (IoT) based reminder system has been developed. It is designed to assist the patient who forgets to take medicine. The proposed system consists of an IoT enabled device and an android application. It mainly focuses on dementia patient. But it is beneficial for all. Patients will no longer have to worry about daily medication. The application will send a notification when it is time to take medicine. The mobile application is used for keeping the record in medicine details and reminding the schedule of medicine. Generally, for home-based health care the arrangement include communications, imaging, sensing and human computer interaction technologies embattled at diagnosis, treatment and monitoring patients without disturbing the quality of lifestyle. It can be possible the development of a low-cost medical sensing, communication and analytics device that is real-time monitoring internet allowed patients physical conditions. Internet of Things (IoT) network will provide active and real-time appointment of patient, hospitals, caretaker, and doctors apart from this the secured data transmission from source point to destination for the purpose of remote monitoring there is need of the architecture of a low-cost embedded platform for Web-based monitoring. An app is built for the user (caretaker) which enables him to set the desired time and medicine. These details will be stored in the IBM Cloudant DB. If the medicine time arrives the web application will send the medicine name to the IoT Device through the IBM IoT platform. The device will receive the medicine name and notify the user with voice commands.

Keywords — Internet of things (IoT), IBM Cloudant DB, dementia patient, application.

INTRODUCTION

Most of the time due to number of works for the people as well as regarding age and some disease which leads to forget the basic things among daily routine. If the patient sufferings from the disease where it is compulsory to take medicine at proper time, in this paper we have review the technology of home health care system among them a medicine reminder system and some improvement regarding authentication have well focused. Generally, for home-based health care the arrangement includes communications, imaging, sensing and human computer interaction technologies embattled at diagnosis, treatment, and monitoring patients without disturbing the quality of lifestyle. It can be possible the development of a low-cost medical sensing, communication and analytics device that is real-time monitoring internet allowed patients physical conditions. Internet of Things (IoT) network will provide active and real-time appointment of patient, hospitals, caretaker, and doctors apart from this the secured data transmission from source point to destination for the purpose of remote monitoring there is need of the architecture of a low-cost embedded platform for Web-based monitoring. The distant monitoring is made possible by using various biomedical devices, they measure and transmit data via Bluetooth or ZigBee to a unit that manages them (PC, iTV). The collected information may be stored on the device or sent to a collection centre that provides a complete monitoring, for both health professionals and patients. Access to the medical centre can be allowed, via web, from mobile device or PC 2 The IOT and RFID combination also play a vital role in object detection and personal identification which can be use categorized the person while remote monitoring when number of people information have observed which will helpful to unique identity to each patient and their respective data will be stored. Because of healthcare reforms, digital medical records have facilitated the widespread availability of publicly available, statistical data. Feeding the pool of mounting data is the patient doctor interaction Physicians assess the patient's complaint and prescribe a course of action The data collected provides the basis for a decision support tool for patients to compare Prescription Drug Plans based on a patient's individual situation and preferences. The tool will provide explicit information that will assist the patient in determining the most suitable prescription drug plan, considering the individual importance of plan features. Utilizing historic data, comparisons on Prescription spending will be made to past patients who have a similar health profile as identified by the current patient3 . Figure 1, is observed result from review which leads to home health care module specifically for the medicine whose technology discuss in technique requirement part. In overall system function the alarm will generate according to scheduled and the situation can be recorded with help of sensor which will remotely monitor, save for the future reference, update drug information according to need through web after comparing drug taking habit of patient.

LITERATURE REVIEW

Ilkko et al4 proposed UbiPILL A Medicine Dose Controller of Ubiquitous Home Environment (2009), Home automation and wireless sensor network which have enhancing the quality of life by providing security, information and comfort. Here had discuss a centric home server with three main roles: use of existing Interfaces on registered systems for remote monitoring and Control, serving the surrounding system as a data gateway and Providing content adaptive user interfaces enhanced by Belongings of end-user client devices, the ubipill device had implemented to remind people for elder and for monitoring purposes ubipill and home server have been designed to reliably monitor the medicine box activity by web browser.

Kliem et al5 proposed Security and communication architecture for networked medical devices in mobility aware eHealth environments (2012), Telemedicine concept is cost efficient and location autonomous monitoring system, the suitable and secured medical data can be transferred with different devices with attention towards security and privacy issue. Emergency situations need on the flutter network integration and data transmission fluctuating from domains like patients home, medical practices, ambulances and, hospitals, where each domain may parallel to a different authority so, mobility aware approach allowing out of the box medical device integration and authentication, and simultaneously fulfilling the typical security and privacy requirements of e-health environments.

Parida et al3 proposed Application of RFID Technology for In-House Drug Management System (2012), RFID based technology have used to make drug management system, in this tracking of medicine can be done including emergency or regular medicine with or without RFID tag. the HF tag have assigned the user and by employing RFID reader along with camera and web based system to track the user. This system can be beneficial for the old age, less educated people.

Clifton et al2 A Self-powering Wireless Environment Monitoring System Using Soil Energy, proposed A large scale clinical validation of an integrated monitoring system in the emergency department(2013),In the integrated patient monitoring which include electronic patient data which generally have more amount challenges to acquire cope with artefact data with the help of algorithm, analyzing and communicating the resultant data for reporting to clinician, here in this demonstrated the machine learning technology embedded within healthcare information system which provide clinical benefits for improving patient outcomes in busy environments.

Hamida et al6 proposed towards efficient and secure in-home wearable insomnia monitoring and diagnosis system (2013), Due to the evolution in technology it is now possible to specific timing monitoring here delivers an experimental estimation of communication and security protocols that can be used in in-home sleep monitoring and health care and highlights the most proper protocol in terms of security and overhead. Design Procedures are then derived for the distribution of effective in-home patients monitoring systems

Ray et al7 proposed Home Health Hub Internet of Things (H3IoT) (2014), Health is vital part of life and it is quite necessary to give priority health related issue in which digitization helpful by using number of devices through the concept of IOT but due to heterogeneity and interoperability the concept of digitization for health care is neglected, here in this the best focus given to architecture framework for human health hub which have envision of usage of real-life implementation.

Shivakumar et al8 proposed Design of vital sign monitor based on wireless sensor networks and telemedicine technology (2014), Vital sign monitor can be implemented with Bluetooth technology which is embedded with sensor, the transmitter will include the application oriented smart phone enable with 3G or IEEE 802.11 i.e. wi fi based transmission. The data from transmitter will be sending to cloud for centralized monitoring takes place; the expert in remote place can view all patient data and in case of emergency can take appropriate action.

Ajmal Sawand et al1 proposed Multidisciplinary approaches to achieving efficient and trustworthy eHealth monitoring systems(2014),The technological merging between IOT, wireless body area network and cloud computing have vital contribution in e health care which improve the quality of medical care, basically patient centric monitoring play a role in e health care services which involve medical data collection, aggregation, data transmission and data analysis here entire monitoring lifecycle and essential services component have discus as well as design challenges in designing the quality and patient centric monitoring scheme along with potential solution.

Huang et al8 proposed the intelligent pill box—Design and implementation (2014), the implementation of pill box has proposed by keeping the problems of old age people in mind to provide full medication safety. The pill box will remind the patient about timing by doing this drug abusing can be controlled.

Al-Majeed et al10 proposed home telehealth by Internet of Things (IoT) (2015), The real time monitoring can be possible through IOT which helps in development of low cost medical sensing, communication and analytic devices which make quality of life, in case of density of messages there is fear of information degradation but by using proper algorithm we can resolve the problem and can make the low cost imaging, sensing and human computer interaction technology.

Lin et al9 proposed A Self-powering Wireless Environment Monitoring System Using Soil Energy (2015), The monitoring system can use the self-powering wireless environment with the help of renewable energy which can be beneficial in remote places where the power problem in wide manner, in this the system have demonstrated which will uses soil energy with carbon, Zink electrodes.

Moga et al11 proposed Embedded platform for Web-based monitoring and control of a smart home (2015), Present the low-cost embedded platform for web-based monitoring and controlling and the platform consist of distributed sensing and control network and touch screen to easy use interface to the user and remote web-based access

Personal Assistance Device for Independent Senior Citizens/ Patients [2020] by A. Yuvaraj K, B. N. Gunasekhar Reddy, C. V. Saritha This paper proposes an affordable personal assistance device for health monitoring of elderly people using different sensors which can measure pulse rate, position of elderly. Proper intake of medicine at correct time is indicated by the display on OLED screen and an alert is produced by buzzer. This paper provides shape and operating of an IOT based totally Personal Assistance Device which is a helpful device using low force Atmega328 microcontroller and ESP8266.

CONCLUSION

We have demonstrated a mobile application that generates alarm signals to remind a patient to take medication. We focus on helps patients and improving the monitoring system. The application Medicare is easily accessible. Combination of a sensing system with android application helps us to measure how well a patient can take their daily medication in real-time. The availability of sensors and other medicinal services gadgets (IoT) work better in consideration of patients. It allows real-time monitoring. Better compliance in terms of the taking of medicine can be acquired with the use of our proposed framework. This framework assures the security of the patient, prevent wrong dosages, support medication adherence. As a future work, we are wanting to improve our drug update framework by presenting extra highlights utilizing portable application and incorporate other medical services. A data-sharing feature between patient and health care professionals would also be developed. Voice-alert notification is being considered as part of the future works; a system that will not only send notification however also read the content of the notification alert to the listening of the patient.

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