

Implementation of Patient Healthcare With Alert System

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ABSTRACT

Patient healthcare provision in the home environment presents many challenges. Patient Healthcare is a term used for the practice of medicine and public health supported by mobile devices. It is most commonly used in the reference to using mobile communication devices such as mobile phones, tablet & computer PDAs. A wireless sensor network with a large number of sensor nodes can be used as an effective tool for gathering data in healthcare situations. It is an autonomous sensor to monitor the physical or environmental condition. This project addresses Patient Healthcare System at home. The purpose of this project is to on emergency case doctor can handle the situation using this device. After analysing these patient records from device then doctor send the all details via SMS to the patient like prescription, tablets etc., and patient take action on this update and take a relax.

Keywords: Predictive monitoring, Wearable sensors, Personalized monitoring Microcontroller,

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I. INTRODUCTION

The majority of the patients in the hospital are ambulatory and they are well suited to be monitored using wearable sensors for the purpose of predictive care. The goal of such system is to provide early warning of physiological corrupt Such that preventative clinical action may be taken to improve patients outcome Health is one of the global challenges for humanity. World health organization (WHO) has mentioned that for an individual proper health is the fundamental right. The people who are healthy secure their income as they don't need to spend money For medicines and in hospitals. They reduce burden on over populated clinics, hospitals and reduce workload of medical professionals. So to keep people fit and healthy proper healthcare services should be provided.

Despite wearable patients' monitors now being manufacture allowing the collection of physiologically data from ambulatory patients the resulting quantity of data acquired each day is large the data deluge effect

occurs. The workload of clinicians and healthcare workers prevents then inspecting long time series of multivariate Patients physiological data to high degree accuracy and the predictive accept to patients monitoring is lost. Intelligent online processing of this large datasets is required for predictive monitoring the results of which should then focus the limited resources of human experts to these to those subsets of patients who are deemed to be most at risk of being physiologically unstable and who are in need of expert review.

II. RELATED WORK

We know that every individual is concerned about his/her health, as we know health is wealth. Nowadays due to changes in lifestyle, climate, etc. health is getting affected and people are getting hospitalized. Proper immediate treatment should be given so that they are

again fit n fine. But continuous monitoring of patient is not possible in hospitals, so we r proposing a predictive health monitoring system which uses some wearable sensors which monitor patient continuously.

Traditionally, patient was monitored manually for some days and then the reports were written. Then these reports were used later by doctors when some emergency abnormal conditions take place. But these written report were bit tedious to maintain records and may get misplaced.

So later researchers thought of a system which can ease the task of monitoring. This lead to invention of predictive monitoring system using wearable sensors. Here we are using Arduino, which will continuously monitor the system and proper urgent alarm will be sent when emergency is there.

III. PROPOSED SYSTEM

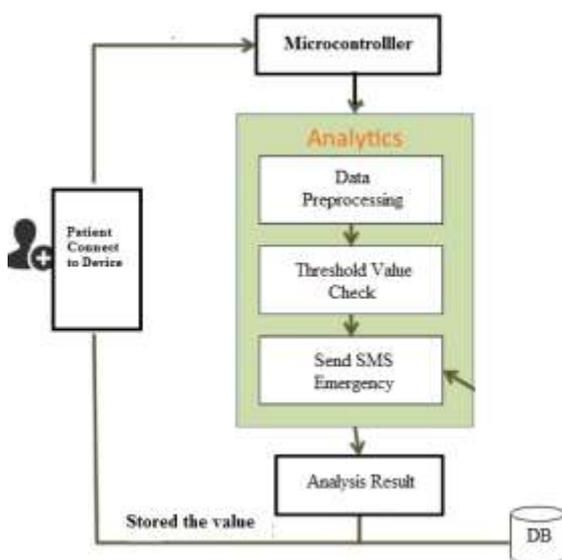


Fig 1. System architecture

IV. MATHEMATICAL MODEL

System Description:

$S = \{P, M, S, D, V\}$

Input:

Function Health Calculation ()

P : Patient.

M : Microcontroller.

S: Sensors

D : Doctor.

V : Value of Patient health.

Output:

When Patient connects to the device then automatically calculated patient health.

Input

Function SMS (id, request, data)

ID : unique id for each patient.

Request : Doctor send request to patient.

Data : Doctor input text data.

Output: Doctor send SMS in case of patient emergency.

Success Conditions: Success system when correct value sends health value to the doctor

Failure Conditions: Our system fails when no any result found to the given input.

V. RESULT ANALYSIS

Normal range for various parameters:

The body temperature lies in the range 36.5 degrees 0C to 37.2 degrees 0C for a healthy person.

The heart rate of a normal adult ranges from 60 to 100 beats per minute.



Fig 2. NodeMCU wifi controller

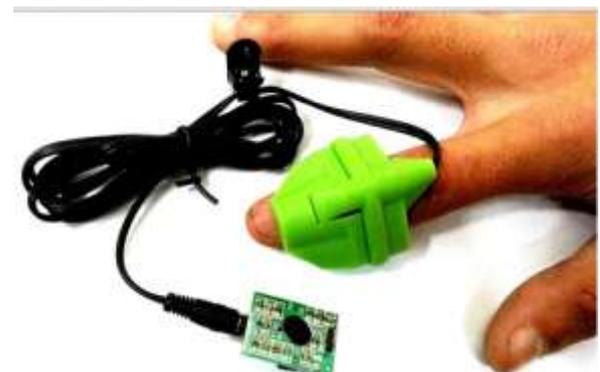


Fig 3. Heart beat sensors



Fig 4. Temperature sensors

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VII. CONCLUSION

The proposed system is more efficient and beneficial. It uses low cost, lightweight sensor which monitors the patient continuously and proper messages are provided in emergency. Thus it saves life of patient when abnormal conditions take place. A dynamic integration related to multimedia medical data provides the framework which is low overhead and rich multimedia support. The wireless medium develops a wireless emergency healthcare system for an environment that integrates with several technologies such as Microcontroller, Sensors and SMS.

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