

Predictive Monitoring of Patients with Clinical Observations

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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 analyzing 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

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 mone 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. PROBLEM STATEMENT

Data dropout was a significant challenge, mainly due to infrastructure problems (interruptions in the hospital wi-fi service) or expired batteries. The ECG sensor had the bare minimum battery life required for use on the ward (at approximately 24 h), such that nurses could change the device once per day . Any shorter battery life would require several changes per day, which is deemed unrealistic for clinical practice. However, the actual quantity of data ultimately collected was large. Here we solve the above problems using the Patient Healthcare with alert. When patient at home then doctor any time watch on patient updates.

III. LITERATURE SURVEY

Monitoring Mobile Patients Using Predictive Analysis By Data From Wearable Sensors, International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) – 2016.

Description: In this paper system uses sensors, the data acquisition unit, microcontroller (ie.Arduino) and software. This system is able to send alarm messages about the patient's critical health data by text messages or by email reports. By using this information the healthcare professional can provide necessary medical advising. [1]

Study on Mobile Healthcare System, International Journal of Advanced Research in Computer Science and Software Engineering, 2014.

Description: Monitors the location based rapid search for patients and performance related issues are focused. The privacy related issues are focused which provides the

authenticated usage by cryptographic mechanism and provable data security. The strong privacy preserving schemes are analyzed which provides the efficient e-health system by providing privacy and security. [2]

Data Mining for Wearable Sensors in Health Monitoring Systems: A Review of Recent Trends and Challenges, Center for Applied Autonomous Sensor Systems, Orebro University, SE-70182, Orebro, Sweden;2013.

Description: This paper provides a recent review of the latest methods and algorithms used to analyze data from wearable sensors used for physiological monitoring of vital signs in healthcare services. In particular, the paper outlines the more common data mining tasks that have been applied such as anomaly detection, prediction and decision making when considering in particular continuous time series measurements. [3]

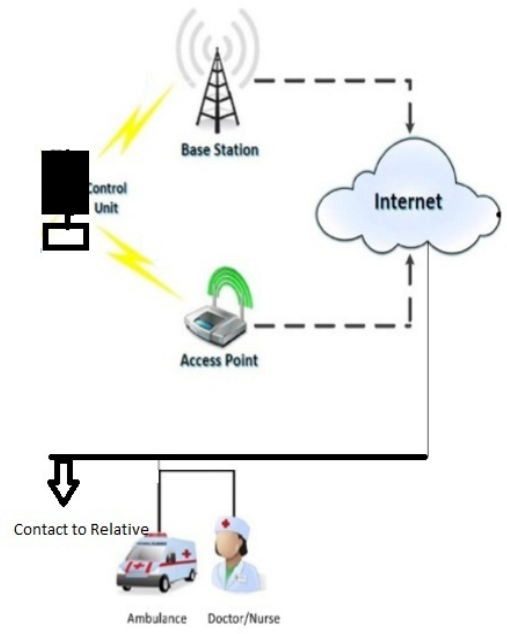
Mobile Healthcare System using NFC Technology, IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 3, May 2012.

Description: In this paper developing a basic architecture for m-healthcare services using Near Field Communication (NFC) to facilitate the provisioning of healthcare to people anywhere, anytime using mobile devices that are connected through wireless communication technologies. [4]

Mobile based Primary Health Care System for Rural India , Mobile Computing and Wireless Networks, CDAC, Electronics city, 2008.

Description: This paper explores the present status of Mobile based Health Care systems in different countries, shortfalls in Primary Health Care Management in rural India, and the potential solution to fill it with the enabling of Mobile Web technologies for Primary Health Care management. [5]

IV. PROPOSED SYSTEM



V. MATHEMATICAL MODEL

System Description:

Input:

- Function Health Calculation ()
- P : Patient.
- M : Microcontroller.
- S: Sensors
- D : Doctor.
- V : Value of Patient health.

Output:

When Patient connect 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 send health value to the doctor

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

VI. 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.

REFERENCES

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