

THE PARAMETER MEASUREMENT OF MATERNAL WOMEN AND PRENATAL WITH REMINDER SYSTEM USING IOT AND CLOUD SERVER

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ABSTRACT

The purpose of this paper was to define parameter measurement with reminder system for maternal women and prenatal healthcare in the context of developing countries. IoT is extensively used in all applications. In the maternal women and prenatal monitor and reminder system IoT plays a major role of connecting doctors by using mHealth monitoring devices. The maternal women find this to be very economic and beneficial. There are various methods that monitor the wellbeing of the maternal women and prenatal. Internet of Things (IoT) is expected to play a major role in our lives through pervasive systems of sensor networks encompassing our environment. These systems are designed to monitor vital physical phenomena of maternal women and baby's generating data which can be transmitted and saved at cloud from where this information can be accessed through applications and further actions can be taken. This project presents the implementation and results of a mHealth monitoring system which employs sensors for women and baby's parameters measurements. Here we can measure the heart rate, temperature, pressure, glucose level and nutritional level of the maternal women at the same time we can measure the heart rate of the baby. The sensed data is uploaded to cloud storage. If the value obtained from sensors exist the threshold limit (abnormal condition of maternal women or baby) the GSM module automatically send the SMS to respective relative person and doctor. The system employs Arduino uno, Temperature sensor, pressure sensor, heart rate sensor, level sensor and ESP8266 Wi-Fi module.

Keyword : - IOT, Machine learning, Cloud server, Classification and clustering algorithm

1. INTRODUCTION

Ancient times had only a scan method to know the health condition of the maternal women and the position of the child inside the womb. Those systems lagged in providing the efficient results on time for providing the needed care and treatment. Hence the newly introduced system called as "THE PARAMETER MEASUREMENT OF MATERNAL WOMEN AND PRENATAL WITH REMINDER SYSTEM USING IOT AND CLOUD SERVER" uses the IOT, various sensors to read the temperature, pressure, glucose level of the maternal women and additionally stores in the cloud database for future retrieval.

1.1 LITERATURE REVIEW

In existing, we cannot measure the heart rate of both maternal women and prenatal simultaneously. There are 2 ways to do foetal heart monitoring, externally and internally. External method involves the use of Doppler ultrasound device. Internal method uses a thin wire (electrode) put on your baby's scalp. These

methods are time consuming. [1]Proposed the pregnancy hypertension effect of the women. [2] Proposed the signal detection of uterus contraction. [3] IOT based health care monitor for rural based women.

1.2 PROPOSED SYSTEM

A practical approach to store the maternal women and prenatal's data in multiple data servers. The main contribution is securely distributing the data in cloud servers and making use of those data for future use. Automatically checking the maternal women and prenatal's status and uploaded in internet. Complications and Faulty detections can be prevented. By use of this system, we can monitor maternal women 24/7 and save the data with date and time .So that, Doctor can monitor the maternal women and prenatal's data anywhere in the city. In proposed system, we can measure the heart rate of both maternal women and prenatal at home itself.

2. SYSTEM HARDWARE AND SOFTWARE

The system uses various sensors such as Temperature sensor, pressure sensor, heart rate sensor and level sensor to determine the current situation of the pregnant women. All the changes that take place during the pregnancy are noted and stored in the cloud database. The system also used arduino micro controller and wifi module to send the notification to the concern doctor and the family members.



Fig2.1:Foetal monitor

2.1 WORKING

The sensors such as Temperature sensor, pressure sensor, heart rate sensor, level sensors that are employed are used for determining even the nook changes that are happening during the pregnancy period. Even a small change in the temperature, pressure, glucose level or heart rate can affect the growth of the baby. Hence the sensors are fixed with corresponding parameters that frequently check the status of the patient and update itself to the database. If so there are any changes found the body, the database connects to the wifi module by using the machine learning concept,that automatically calls the buzzer in order to notify it to the family members or the concern doctor. Hence by this way, the patient can be given suitable treatment.

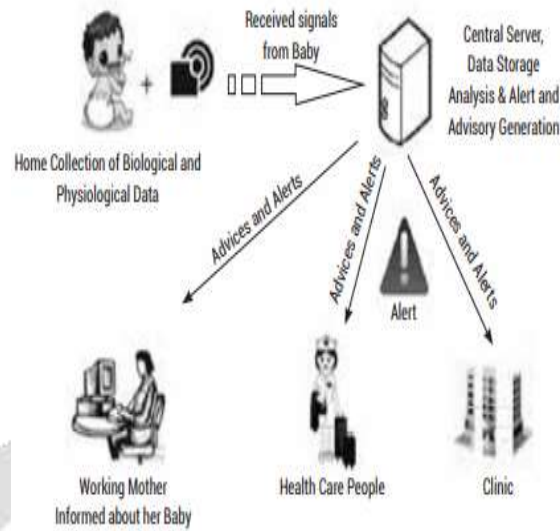


Fig2.2:Alert mechanism

3. GENERAL STRUCTURE

The setup of the system consists of an arduino microcontroller, GSM module for wifi for processing the inputs produced by the sensors attached to the system. Each sensor has a special functionality and has fixed parameters to maintain the normality of the patient body. Whenever the frequency changes are noted, the system alters the database and creates a record. When the parameter crosses the normal level, automatically the GSM module gets activated and notifies to the doctor or to the family members.

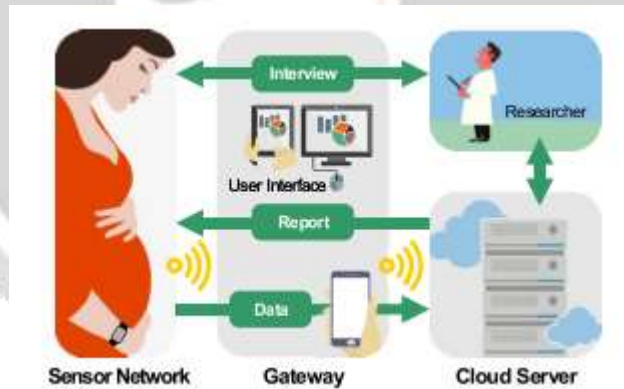


Fig3.1: Sensor working and its applications

3.1 APPLICATIONS

- Automotive
- Home Appliances
- Home Entertainment
- Industrial Automation
- Smart Energy
- Mobile Electronics
- PC Peripherals

3.2 EXPERIMENTAL RESULTS

Thus the picture shows the variations produced in body of the pregnant women, and this abnormal changes are maintained for the next review of treatment. The records are maintained for the reference of the doctor in order to provide the suitable treatment. .If any abnormal conditions last for a period of time, then the alert is sent to the caretaker of the women and the doctor who diagnosed.

4. CONCLUSIONS

Thus this system effectively works with monitoring of the health of pregnant women. Initially the ultrasonic scans were the only way for finding the growth and health condition of the baby , but by using this method, the growth and health of not only the baby but also of the mother can be monitored accurately and care can be given on time.

5. REFERENCES

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