Establishment of Smart Medical Dispenser

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***Abstract*:- This paper deploy the Anytime Medical Counter in all the rural areas where people cannot get the best doctor on track. We install Temperature sensor, Ultrasonic sensor, Heartbeat Sensor, Moisture Sensor to the Medical Dispenser. Doctor examines the Patient through IOT and prescribes the medicine and the Medicine Dispatcher will Dispatch the Medicines from the Dispenser to the user to help illiterate people there will be a supporter. The RFID card will be used to authenticate the Patient. At first Patient will authenticate himself and then will feed the medical datas. The doctor can view the datas through IOT. Once done, the doctor will press the medicine switch and the medicines will be dispensed through the Medicine Box.**

Keywords: Medical dispenser, Online Consultation, Medicine, Pills

I. INTRODUCTION

Medical Dispenser is the implementation on a single board computer with sensors, microphone, camera, speaker, button and network access function belongs to the service category of two-way communication [1].

Telemedicine is an important tool in delivering services to emergency departments (EDs) in rural areas. However, we do not yet know what kinds of services can be effectively delivered or the degree to which these services might be useful. In this pilot study, a high-speed, high- quality video, 24 hour ATM network linked a rural to a major medical center.

No clinical computing topic is being given more attention than that of electronic medical records. At the heart of the evolving clinical workstation lies the medical record in a new incarnation: electronic, accessible, confidential, secure, acceptable to clinicians and patients, and integrated with other, non-patient-specific information [2]. Doctors are asset immensely from the drive toward electronic medical records. It can also help to make the healthcare system more transparent and can be integrated with reimbursement data.

II. OBJECTIVES

The main objective is to make the medical process easy and on fingertips. This system will allow the person from rural area to consult his/her regular or a good doctor for any medication needs. This method decreases the opportunity for error and makes it easier for the end user because all they have to do is open their hand and the correct medication will be dispensed [4]. Our solution will overcome the common pitfalls with an intuitive user interface so even those with limited computer and technical knowledge can fully utilize the system and a simple design that avoids oversized motors, actuators, and containers. The end product will be a low-cost solution to an everyday problem.

III. EXISTING FEATURES

The device will take the patient's medical data's and will store in the Online Server. The system will be low cost .This will bridge the gap between the doctor and the patient. Rural patients can be able to access the good doctor. Regular monitoring of patient health data's is proposed.

IV. APPLICATION & SOCIALBENEFITS

- Applications:
  - In Villages
  - In Highways
  - In Remote areas etc.
- Social Benefits:

Easy Interface so that anyone can be able to access it. In rural places and remote areas this will be beneficial. Work accuracy will be more and human errors can be avoided [3]. A patient's data's will be available on the cloud so that a doctor or the patient or his family can access the data's anytime even after 2-3 years of the treatment and the data's will be more useful in case of any emergency. Also Reduces self medication.

V. PROPOSED SYSTEM

In the PROPOSED SYSTEM, (ATM MEDICAL DISPENSER) AMM is to establish a Telemedicine Conference System from the Remote place by both the Distinguished Doctors and Patients.ATM like instrument is installed in the rural place for better Medical Treatment and Diagnosis for rural People.

VI. MODIFICATION AND EXPERIMENTAL ANALYSIS

We deploy the Anytime Medical Counter in all the rural areas where people cannot get the best doctor on track. We install Heart Beat, Temperature sensor, Ultrasonic sensor, pressure sensor, weighing machine, Camera and Head phones to the Medical Dispenser. An Application is installed in both the ends for audio and visual communication & chatting with doctor.

To attend the experimental analysis, we are going to use IOT devices to set reminders to the people though a medication box, which will alert them time to time to take medication. If a person is not carrying IOT Devices, it will send alerts to mobile via SMS and if a person is harrying a laptop, it will send an email alert. Usages of Medical IOT Devices: Medicine Alerts -Email and mobile alerts. ATM (Any time medicine) alerts and dispense of the

Medications. An IOT Device which can get the timetable from Cloud which is been given by Doctors medicine the gadget will convey the medications in time and fix the malady or contamination the individual is enduring Ready System will create alarms to the individual at whatever point it is time. A cloud log is accessible for the Patience and specialists for further treatment [7]. The apportioning framework will administer prescriptions with water. The glass was naturally loaded up with new water. Ready messages get from the cloud for at regular intervals of time to take no less than one glass of water [8].

Fig.1 IoT based Medical Dispenser

➢ ***TEMPERATURE SENSOR***

Fig.2 LM35 Temperature sensor

The LM35 series are precision integrated-circuit temperature devices with an output voltage linearly-proportional to the Centigrade temperature.

➢ ***FEATURES***
- Calibrated Directly in Celsius (Centigrade)
- Linear + 10-mV/°C Scale Factor
- 0.5°C Ensured Accuracy (at 25°C)

➢ **MOISTURE SENSOR**

Fig.3 Moisture sensor

Moisture sensors measure the volumetric water content indirectly by using some other property of the, such as electrical resistance, dielectric constant, or interaction with neutrons as a proxy for the moisture content.

➢ ***FEATURES***
- Input voltage: 5v
- Output voltage:0-5v
- Output: Analog.
- Sensitivity adjustable

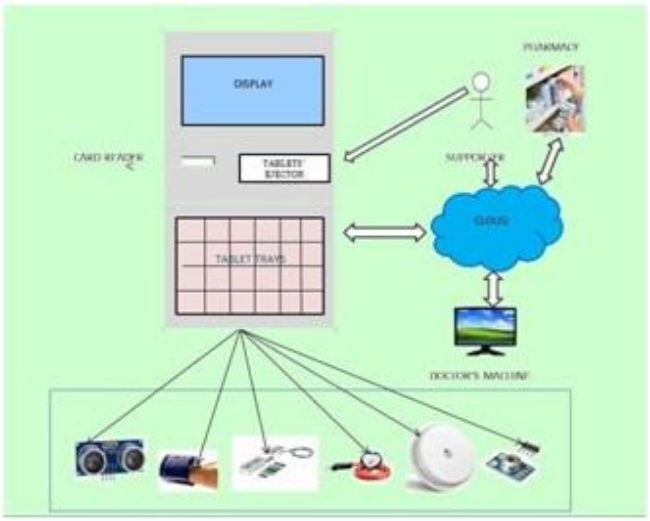

Fig.5 Architecture of Medical Dispenser

➢ ***MODULES***
- USER / DOCTOR REGISTRATION
- CLOUD
- EMBEDDED HARDWARE CONSTRUCTION
- BIOMEDICAL ANALYSIS

VII. RESULT ANALYSIS

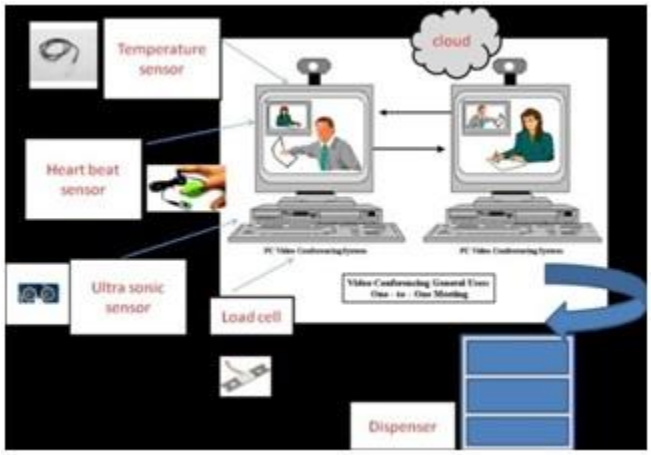

Fig.5 Preliminary Result

As shown in Fig.5, the number of MDTs in the smart medication dispenser can be increased. Fig.6 (a) shows the front view of the smart medication dispenser with one MDT (i.e., for one patient), whereas Fig.6 (b) shows the smart medication dispenser with two MDTs (i.e., for two patients). The smart medication dispenser can be connected to a medication-monitoring server via an Ethernet port. It can also be connected to the server wirelessly by attaching a wireless modem or a Bluetooth dongle to the USB port. In addition, the dispenser also supports RS232 serial communication with a local PC.

Fig.6 Final Results

VIII. CONCLUSION

The Rural medical ATM can furnish patients with a more quick and customized means through which they can get therapeutic input, spare significant time, fulfill their craving for individual control over their own health, and lower the cost of long haul medicinal care.As the identity of doctor is not revealed, there is uniform distribution of patients towards doctors. This system is low priced and non-invasive

IX. REFERENCES

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