



# IOT BASED AUTOMATED HEALTH CARE SYSTEM FOR HEMIPLEGIA PATIENT

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## I.ABSTRACT

With the growing importance of the public health and increasing economy, an efficient health care system are becoming an integral part of the system. In this fast pace of life, it is difficult for people to be constantly, available for their near ones who might need them while they are suffering from the difficult situations. Patient monitoring systems measure physiological characteristics either continuously or at regular intervals of time. The recent survey of world health organization estimated approximately 5.6 million people were paralyzed representing 1.9 percent of the population roughly 1 among 50.

Health surveillance of the paralyzed in the hospitals reveals that, there are many exercises, stimulation and medicines to safeguard the paralyzed people. But there is not a particular monitoring system to monitor the health conditions of the paralyzed. To overcome these problems a monitoring system is introduced, which is used to check the patients' health conditions. In the proposed monitoring system, bio sensors are used to sense the vital framework of patients such as pulse rate, blood pressure, airflow sensor and these parameters are measured continuously and transmits the message to the caretaker by using GSM. This can be processed in Microcontroller (Atmega 328P).

**Keywords—** Hemiplegia, monitoring system, altering, Responding ,Emergency

## I. INTRODUCTION

A research done by this hemiplegia patients had 93.8% Chance of achieving the indivisually walk within 8 months.In the first 76 hours they could be affected by fully. It

doesnót mean that you cannot recover the their abilities and body parts which are affected by hemiplegia. Hemiplegia is can be lead to right brain damage or left brain damage.If is affected to left brain then it is lead to left half of the body or else if it is affected to right brian,then it is lead to right half of the body.if the patient is affected by a hemiplegia that person cannot do daily activities by own one should care taker for the patients or for them. The patient will get condition by brain damage or spinal card injury that leads to paralysis one sided of the body.This can be cured by medical treatment and also by physiotherapy.

## II. METHODOLOGY

Our proposed system works by reading the tilt direction of the user part. The working of the device here is shown by holding in the fingers of the mobile hand. The user now just needs to tilt the device in a particular angle to convey a message. Tilting the device in different directions conveys a different message. Here we use accelerometer in order to measure the statistics of motion. It then device in a particular angle to convey a message. Tilting the device in different directions conveys a different message. Here we use accelerometer in order to measure the statistics of motion. It then passes on this data to the microcontroller The microcontroller processes the data and displays the particular message as per input obtained. The microcontroller now displays the associated message on the LCD screen. It also sounds a buzzer along with message as soon as it receives motion signal from the accelerometer. If there was The microcontroller processes the data and

displays the particular message as per input obtained. The microcontroller now displays the associated message on the LCD screen. It also sounds a buzzer along with message as soon as it receives motion signal from the accelerometer. If there was no one to attend to the message displayed on the LCD, the patient can choose to tilt the device for some more amount of time which will trigger an SMS to be sent through a GSM modem to the registered care taker of the patient with the message that the patient wants to convey. In this way the Automated Hemiplegia Patient Care System truly automates the care taking ability of the patient which ensures a timely attention to the patient and thus for a good health of the patient.

**III. BLOCK DIAGRAM**

**Transmitter**

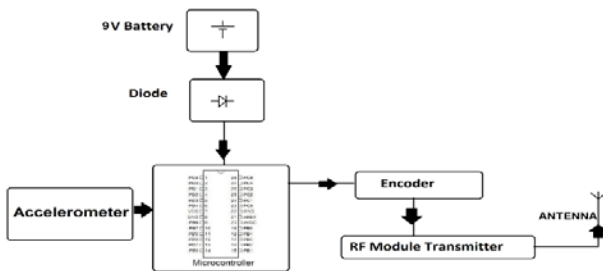


Figure 1. Block Diagram of transmitter.

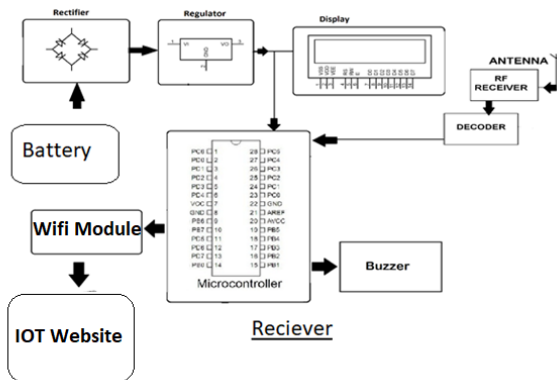


Figure 2. Block Diagram of Receiver.

At first we have to identify the which side of the body is affected, either it may be attacked to right side of body or left side of the body. After getting information from patient, we have to design either they want on which side of the body. if affected body is right then it should be mounted on the left hand and we are designed like that. In this project we have two main streams, one is Transmitter and Reciver. The reciver part is mounted on the hand and transmitter part which is keeping aside.

For reciver part power supply is battery and it is insisted on underneath glove. In reciver part we having accerlometer and it is used for motion detection. if hand is titled in one direction, we have created statements it will be displayed on transmitter part having LCD display. depends upon the tiltation the statements are changed and displayed on the display. we have wifi-module which make interconnection between the reciver and transmitter part.

Arduino/Genuine Uno is a microcontroller board in view of the ATmega328P. It has 14 advanced information/yield pins (of which 6 can be utilized as PWM yields), 6 simple data sources, a 16 MHz quartz precious stone, a USB association, a power jack, an ICSP header and a reset catch. For transmitter We will supply power dc and we used to code to integrated circuit and this code is depends upon requirements.

**IV. working**

The working principle of hemiplegia patient health care system using iot. It peculiar device for the hemiplegia pateints and who needs help. This device will help the patient with alert the surrounded persons with buzzer and also alert the message by displaying in the lcd display .it contains one transmitter and receiver, which helps them in communicating. the reciver is mounted on the hand ,it having the power supply with battery and in the reciver part consists accerlometer which is used detect the motion. The motion made by patient. The motion having the particular displaying message. The device is mounted on the hand, the hand is titled to right, the LCD will display some related message to that particular motion. if it is tilted to left then it have special message to display. We have designed this device with five messages.

- I. I NEED FOOD
- II. I NEED WATER
- III. CALL ATTENDER
- IV. EMERGENCY

These four messages will display with respect to Patient Motion of hand. We coded the reciver and transmitted part with using embedded C. In this project.

## ADVANTAGES

- Cost effective
- Easy to implement and efficient
- It provides 24/7 monitoring
- It is easy handle.
- It is easy to wearable.
- Good Communication between patient and surrounded persons.

## APPLICATIONS

- Hospital for communicating with doctors and nurses.
- Home or office for communicating with other people.
- For asking help to other.
- For using in emergency purpose ambulance calls.
- For continuous monitoring of patient's health condition.

## V. RESULTS



Figure 3: Call attendant



Figure 4: I need Food



Figure 5: I Need Water

The final outcome is the patient requirements which will be displayed via LCD display. In LCD will displays the patient requirement needs and it changes with respect to motion of hand.

Once the observer notices the requirement the required requirement is full filled.

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