IOT based Smart Integrated Medical Health Monitoring System

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***Abstract*:- India is one of the most populous countries of the world. Due to over population, ignorance of health have been remained the major problems in India. For every one minute a death swoops in because of unpredictable and unexpected accidents. To save a life is auspicious as well as precious. The idea here is to provide an intelligent smart health system (IMHS) using some sensors and microcontrollers which are implemented in stretcher. It will sense the body condition and send the data to the hospital and also informs to nearby police station where accident occurs to avoid law issues through server. If this system is implemented, many human lives can be saved by preparing intensive care unit in hospital, as their physical parameters are updated to hospital before their arrival to hospital.**

Keywords: IOT based Smart IMHS,

1. INTRODUCTION

Now-a-days, road accidents are generally increasing due to high population and do not obeying the traffic rules in our country. It is reported that in India more than 150,000 people are died each year in road traffic accidents which is really distraught. So, due to these accidents people are dying but we need to consider other factors like delay in the response of the emergency vehicle like ambulance at the time of accident took place and also delay in the treatment provided to the victims of the accidents in the hospital since the hospital will start to prepare for treatment only after analysis the health condition of the victim [1]. Overall, time is wasted here which is a critical issue that leads to the patient loss. This paper addresses the problem of increasing the chances of saving the bleeding person by using an emerging technology Internet of Things which is connecting more devices exponentially to the internet. IOT affirms to make our global society more efficient and productive than we ever imagined possible [2].

Recently, smart healthcare systems become a hot area of can be made sooner by the hospital and the health status can be send to the hospital by Hence, we are connecting ambulance with IOT by making it smart ambulance that can collect and transmit the bleeding person's health status to the nearby hospital through the internet [3]. So, the doctors can know the physical conditions, whether the condition of the victim is really critical before the victim arrives to the hospital itself. If so, the arrangements for the treatment using the sensors that only detect the parameters like heartbeat rate, amount of blood loss, temperature etc.

EMS systems provide transportation and medical care to maximize survival probability of patients [4]. Historically, a lot of technologies have been adapted to achieve this goal, in which the 911 telephone based report and response system and the radio communication scheme are important elements for the early EMS system. Recently, the unprecedented growth in mobile smart phone and wireless communication are impacting the EMS in a new way [5]. Basically, these apps could roughly be divided into two groups: one is about the efficient emergency reporting and responding systems.

2. PROPOSED SYSTEM

The proposed system consists of two sections namely ambulance section and hospital section. In ambulance section, there are many health monitoring sensors to monitor patient live health parameters that are implemented in stretcher. This information is updated to hospital via server for every second. Also it is necessary to inform about accident and patient personal details to nearby police station.

For this, a biometric sensor is used to get patient personal information. This information is updated to hospital and police station through Internet of Things. With this information, an alert will be messaged to patient's relatives by cop.

ADVANTAGES

- Many human lives can be saved.
- Easy to install in all hospitals.
- Easy to decide treatment process prior to patient's arrival to hospital.

3. EXPERIMENTAL DESCRIPTION

➢ ***AMBULANCE SECTION***

They are two section, one is ambulance section another one is traffic section. In ambulance section, we have used at mega 2560 it is the one of the microcontroller. It is consist of 54 analog pins 16 digital pins. These types of microcontroller consist of many input and output pins. We have four sensors used in this ambulance section. They are biometric Sensor, heartbeat sensor, respiration sensor and temperature sensor [8]. The biometric sensor is to get the patient personal information. Once the patient placed their finger print, the sensor can get the patient details. The next one is heartbeat sensor, it is get the patient current heartbeat level, and it will send the information to the microcontroller. The temperature sensor is used to sense the patient body temperature [10]. The temperature values can be sending to the mega condition and the respiration values can be sending to the microcontroller. The RF transmitter also connected the microcontroller the

microcontroller is collected all data can be send to the hospital through IOT it's connected to the microcontroller. We have used GSM 800 model, it will be send the emergency message to hospital, relatives and near by the police station [9]. The patient's information can be send by the microcontroller to nearby hospitals.

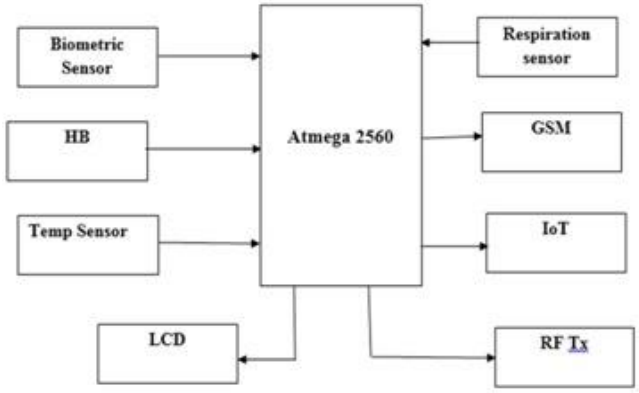

Fig.1 Schematic Diagram of Ambulance Section

➢ ***TRAFFIC SIGNEL SECTION***

We have used another microcontroller in traffic light section the RF receiver can be connected to this microcontroller. Once the ambulance has reached 500m before the traffic light, then RF transmitter in ambulance section sends the signal to the RF receiver in traffic light section. Based on the signal the traffic light can be activated and traffic jam can be avoided.

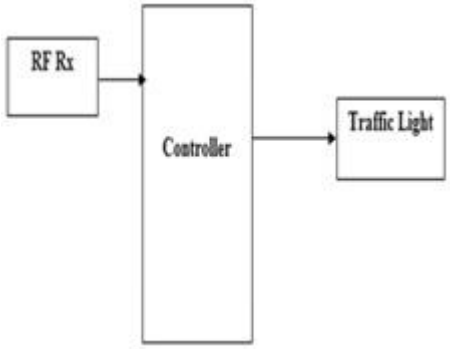

Fig.2 Schematic Diagram of Traffic Light Section

4. CONCLUSION

This work is developed with a main intension of saving the life of human beings. Whenever an accident occurs in a vehicle, the victim details identified using biometric sensor, and also information send to victim relation and hospital, police. The traffic is cleared for the smooth and fast running of the ambulance. And at the same time, the patient's condition inside the ambulance is monitored frequently and the information is updated in a web page, which could be viewed by the doctor at the hospital and make the necessary arrangements.

5. REFERENCES

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