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## Smart Ambulance and Digital healthcare services using NLP and IOT in smart cities

Vaishali Ahirwar<sup>1</sup>, Lalsingh Chouhan<sup>2</sup>, Anurag Kumar<sup>3</sup>

<sup>1</sup>Assistant Professor, CSE & Dr. APJ Abdul Kalam UIT Jhabua (M.P.), India

<sup>2</sup> Assistant Professor, CSE & Dr. APJ Abdul Kalam UIT Jhabua (M.P.), India

<sup>3</sup> Assistant Professor, CSE & Dr. APJ Abdul Kalam UIT Jhabua (M.P.), India

**Abstract:** In smart ambulance provide digital healthcare services using different sensors like heart rate sensor, blood pressure, ECG will be judging reports of patients, will be send to hospital's management system by using Microcontroller Arduino message through cloud server.

**Keywords-** IOT, Microcontroller Arduino, Smart ambulance, Cloud server

### 1. Introduction:

Digital ambulance with upgrade in healthcare center using sensors device pulse sensor that measure heart rate and human body temperature. In this era healthcare sector emerging with advance technologies with higher accuracy to optimize the human critical conditions in this technology. The people in need of healthcare services find it near hospital in smart cities but many patients do not reached to hospital in emergency condition in that case our proposed research technology provide the facility of smart ambulance for patients and IOT is applied to things for reducing the human's Death and safe the human's life, It's comprised of three main phases.

The first phase is detect the health issues of human like human temperature and heart rate, in second phase sensors report will send to hospital management system. Last phase will provide sensor data for viewing at available doctor and patients health progress report send to patients or their guardian. The diseases like cardiac arrest, cancer which is considered incurable earlier, can be cured today's due to advancement in technologies. Technologies, particularly IoT has done a lot in the area of medical science. Internet of things (IoT)

based applications they are using for exchange of data between sender or receiver. IOT could be defined as the interplay between bedside health and fitness care implanted medical devices for sending or receiving data and store these data using in database. The IOT based sensors concepts have been widely used in medical field ,these sensor devices improve the health of humans in this proposed system Medical science gives cures and protects human against different problems and first we optimize the problem after than provide better solution for different diseases.

### 2. Methodology:

In this busy life schedule human diseases rate increase highly According to survey 49% of the heart attack patients, 15 to 18% of stroke and other diseases, 3 to 7 % of heart and arteries diseases and 8% to more heart failure. Death rate from this type of diseases survey show in figure 1. People suffering from these diseases can be treated if ambulance reached hospital on time. To get the better of these problems, we are put in place digital ambulance system. The basic information of patient and his medical information send to the hospital management to making them alert for the treatment of that patient.

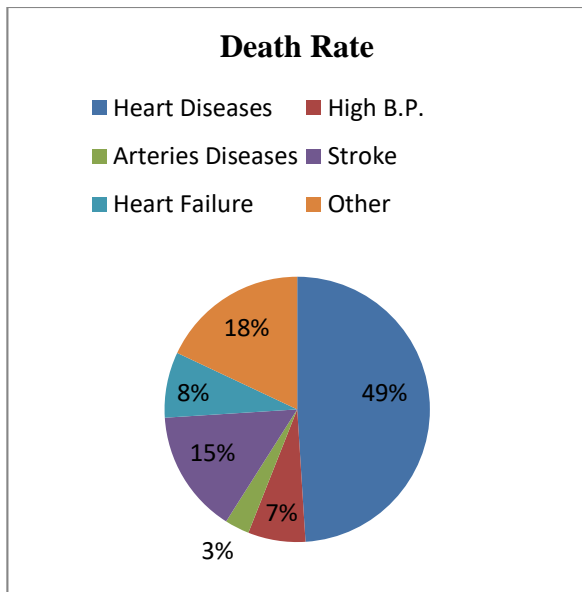


Figure 1: Death Rate

To reduce human diseases rate, we introducing digital ambulance system. The basic information of patient and his medical information send to the hospital management to making them alert for the treatment of that patient. Smart ambulance system application provides information to hospital related to user's medical emergency. It's a arrangement that gives information accurately and efficiently about the patient's health issues including pulse, blood pressure etc. IOT is applied to things for reducing the human's Death and safe the human's life. The system is operated by intelligent ambulance with help of GSM/GPRS System and Microcontroller Arduino, which is shown in figure 2.

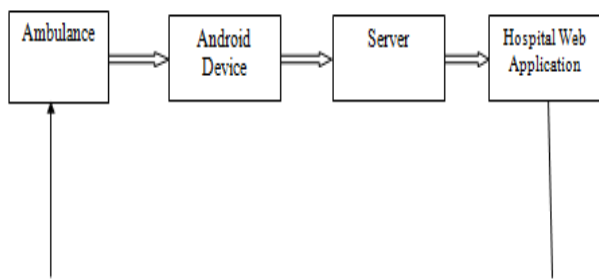


Figure 2: Sending diagnosis report

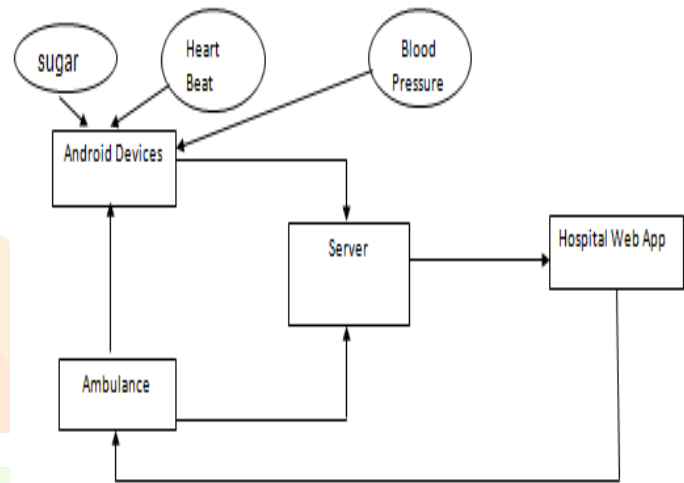
The biological system focuses on the diagnosis of the diseases by using of some specifications, e.g. heart rate sensor, blood pressure, ECG. The proposed system is detect the health issues of human like human temperature and heart rate and sensors report will send to hospital management system. a system will provide sensor data for viewing at available doctor and patients health progress report send to

patients or their guardian. The health condition of patient show in figure3.

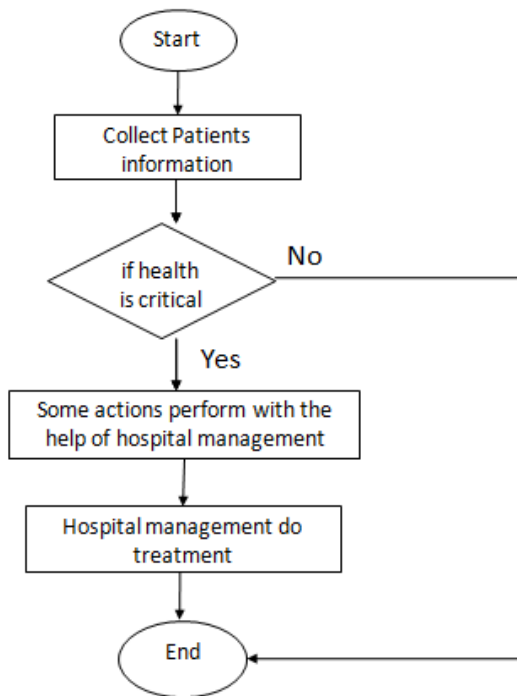
Figure 3: Block Diagram for Ambulance Services

The diagnosis report of patient sent to server and server sent it to hospital web app. If the condition of patient is critical, then some necessary actions perform in ambulance with the help of hospital management prescriptions.

Some necessary actions to taken if needed With the help of different sensors, we check the sugar, heartbeat of the patient who is in the ambulance and ambulance in which



connected Sensor device for example. Analog Heart Rate Sensor [ECG] provides a clear measurement of electrical pulse of the heart in 72 beats per minute (BPM), Pressure sensor, Temperature sensor etc.

**Flowchart of Ambulance Service:**

If the condition of that patient is not well, then some actions perform with the help of prescriptions which given by the hospital management system.

**3. Conclusion:**

In this paper we proposed smart ambulance system for patients in emergency condition where patients do not reached hospital in critical conditions. When patient is in ambulance, they are monitored with IOT sensors, Arduino device and Arduino systems collects patient's information and send it to hospital in critical conditions. The information of patients with his health condition sent to server and server sent it to hospital web application.

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