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A futuristic digital interface with a glowing Earth globe in the center. The background is dark blue with various data visualizations including bar charts, line graphs, and pie charts. Text elements like 'BUSINESS', 'NETWORK SEARCH', and 'WORLD' are visible. A person's hand is seen at the bottom, interacting with the interface.

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# Integrated Ambulance System Using Telegram Channel

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**ABSTRACT:** In India, during the alternate surge of Covid- 19 Epidemic, nearly all city hospitals beds were filled and the entire health department collapsed with lot of issues such as waiting outside the sanitarium due to the attainability of Beds, Ventilators, Medical ICU etc., which leads to death inside the ambulance itself. In a critical case, it's delicate for the entire family to track their close people and decide going to which sanitarium. So, the board keeps required details and it'll post in Local Hospital Telegram Community channel where a family member can join fluently. This reduces the corruption in hospitals by denying the vacuity of medical systems and the corruption of ambulance motorists for diverting the cases to the sanitarium, which pays him a bribe.

## I. INTRODUCTION

This essay is concerned with connecting the sick with medical assistance. The implementation of these technologies with little error, maximum efficiency, widespread dissemination, and general usage of mobile technology for the benefit of patients in crisis presents a significant challenge for us.

This study presents a simple, effective, and new method for implementing a broad range of medical service availability searches. The procedure entails employing various sensors such as oxygen sensor, body temperature sensor, respiratory sensor and heartbeat sensor to sense the patient's bodily characteristics and communicating the information via an app like Telegram with the technology of Internet of Things.

The medical facility would not be within easy reach of the locals in the majority of rural locations. Therefore, most people ignore any kind of tiny health difficulties of the patient that manifest in the early stages by a change in important components like the body. The patient may face a major problem and need hospital services. They require In such cases, any person known can access the telegram channel and join it.

The various recorded details are sent to the channel and the channel suggests a list of nearby hospitals and available medical services. The ambulance can take them to the suggested hospital. This saves unnecessary hustles and saves time in the treatment of the patient and admitting them to the hospital.

## II. LITERATURE SURVEY

Qingchen Jiang, QiangSu, Yanhong Zhu, Weihua Wu, "Ambulance location problems and cost-effective analysis with time-dependent demand and speed". In this paper, an EMS cost-effective model has been adopted in a multi-period environment in order to minimize the social cost.

R.SharmikhaSree, S.Meera, K.Valarmathi, J.K.Periasamy, "Integrated Ambulance Service with Advanced Real Time Traffic Control Systems". This model incorporates both the propelled functionalities needed for a Smart rescue vehicle just like organizing different Non-crisis logical conveyance frameworks at an equivalent time.

Peter Janković, LúdmilaJánošíková, "Ambulance Locations in a Tiered Emergency Medical System ina City". This paper deals with the optimization of the location of ambulance stations in a two-tiered emergency medical system situated in an urban environment.



**III.PROPOSED SYSTEM**

A biomedical system is made up of numerous sensors that are used to observe how a human being's physical processes work. These different sensors include sensors for measuring oxygen levels, heartbeats, and temperature. Oxygen achromatism can be measured via the SPO2 sensor, a pulsation oximeter. Over someone's croquette, it is a non-intrusive device.

The rate at which oxygenated hemoglobin converts to deoxygenated hemoglobin is calculated by measuring the light's wavelengths. As a standard of care in medicine, pulsation oximetry is now used. A biased way to track your heart rate is with an eyeblink sensor, which uses electrical discovery. A ring that wraps around your coffin is used to criticize electrical effort. The band needs to be moist or you need to apply conductive gel where the sensors touch your skin for the final of these biases to function as intended.

Electrical signals are used by temperature sensors to transmit readings. By measuring the voltage across the diode stations, sensors are made up of two materials that produce an electrical voltage or resistance when the temperature changes. The temperature rises along with the voltage. These are the automatic biomedical parameters discovered and gathered by embedded systems. After the calculations, the ESP8266 module is used to send the parameters to the Internet of Things (IOT).

The ESP8266 Wi-Fi Module is a self-contained SOC with an integrated TCP/IP protocol stack that allows any microcontroller access to your Wi-Fi network. The ESP8266 is capable of hosting operations or delegating all Wi-Fi networking tasks to another operation processor. Therefore, the IOT's communication with Telegram. An encyclopedically accessible-platform, restated, pall-predicated, and consolidated instant messaging (IM) service is Telegram Messenger. Telegram makes it easier for everyone to access the hospital information that was previously placed in the telegram channel. The ambulance driver appropriately and on time arrives at the assisted hospital with the help of a telegram.

	<b>Traditional Systems</b>	<b>Proposed System</b>
<b>Method Used</b>	Asking in the hospital about the availability of bed and ventilator facility.	Used telegram channel to get details without contacting the hospital.
<b>Differences</b>	It is difficult to ask and reach the hospital at peak time.	It is easy to access the hospital bed and ventilator details in telegram channel at peak time.
<b>Features</b>	Contacting through phone calls.	Contacting through telegram channel.

TABLE 1 DIFFERENCE BETWEEN TRADITIONAL SYSTEMS AND PROPOSED SYSTEM

**IV.SYSTEM ARCHITECTURE**

**Module 1:** ESP8266 Wi-Fi Module:It is a self-contained SOC with an integrated TCP/IP protocol stack that allows any microcontroller access to your Wi-Fi network. The ESP8266 is capable of hosting operations or delegating all Wi-Fi networking tasks to another operation processor.



**Module 2:** IoT(Internet of Things):The Internet of Things (IoT) briefly describes the blooming network of internet-enabled devices. The devices do not need to be connected to the public internet and they only need to be connected to a network and be individually addressable.

**Module 3:** Respiratory sensor: The respiratory sensor is sensitive to be stretched. It converts the expansion and contraction of the rib cage or the abdominal area to a rise and fall of signal on the screen.

**Module 4:** SpO2 sensor:The SpO2 sensor is used in Pulse Oximetry test that measures what proportion of the oxygen-carrying molecules present in the blood are actually carrying oxygen.

**Module 5:Heartbeat sensor:**Medical heart rate monitors that are used in hospitals are mostly wired. Consumer heart rate monitors which are designed for everyday use do not need wires to connect.

**Module 6: Temperature sensor:** Temperature sensors are used to monitor the patient’s body temperature to detect any occurrence of fever.

**Module 7: Telegram application:**An accessible-platform, restated, pall-predicated, and consolidated instant messaging (IM) service is Telegram Messenger. All the recorded sensor values are sent in the local Telegram channel. It suggests the hospitals according to the service required.

### V.METHODOLOGY

In today’s scenario, all the medical facilities are upgraded regularly and there are a lot of options available to choose the required hospital. But still, some hospitals do have the facility needed but they might be occupied. The same applies to finding hospital beds and ICU facility. In such critical situations, finding the right hospital with the needed medical services might be a hard task. So the technologies like IoT might be used as a medium to capture the recorded sensor values of the patient’s body and connect it to a platform like Telegram. This application may include a local channel in which the values may be posted from the ESP8266 Wi-Fi Module with the help of IoT. The results for the same are posted in the same telegram channel.

**V.1:Body parametersensing:**The various sensors used here will capture the body values of the patient. The sensors are connected to the ESP8266 Wi-Fi Module and the thus the values are posted from the module to the Telegram application.

**V.2: Problem Recognition:**After the sensors detect the parameters of the body of the patient, the recorded values are sent to the local channel of the Telegram application by any related member. Then, the values are posted and the medical service needed is suggested with the nearby hospitals and services available. It also includes bed vacancy and ICU vacancy.

### VI.BLOCK DIAGRAM

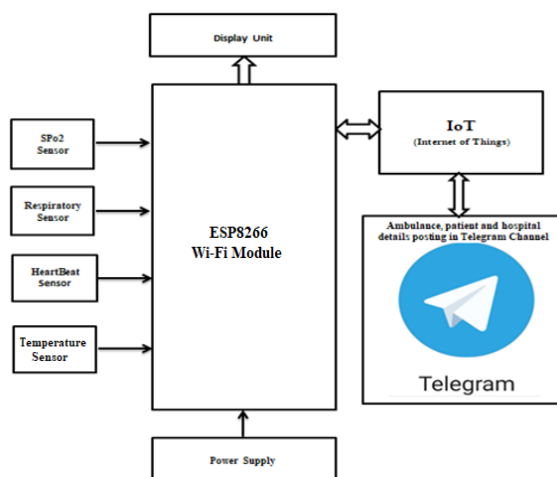


Fig.1. Block Diagram

### VII. FLOW DIAGRAM

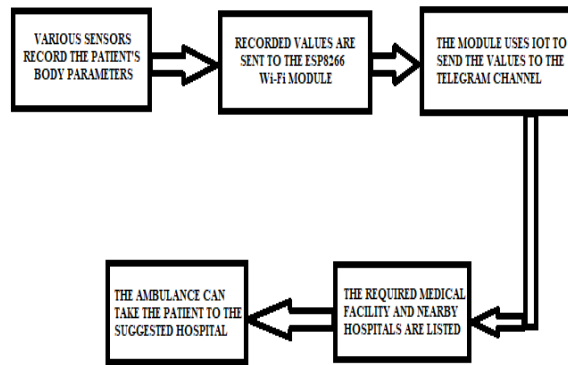


Fig.2. Flow Diagram

Similar to the flowchart, the fixed sensors will detect the patient’s body parameters like temperature, oxygen levels and heartbeat etc. The recorded sensor values are sent to the local Telegram channel with the help of Internet of Things technology. The values are analyzed and the required medical service needed is suggested. The nearby hospitals with the needed medical service are also recommended. The ambulance may take the patient to the desired hospital without wasting any time.

### VIII. CONCLUSION

Ambulance service is a crucial one in the field of medicine. Any patient who needs urgent medical service is carried in an ambulance. But due to lack of time and information about the available service, there is an increased chance of death or any critical condition. The proposed system may be integrated and used within the ambulance to easily access the details. So, it is easier to find the service and reach the hospital on time without any hustle. This prevents corruption of hospital beds and reservation of beds and facilities by the rich people. This also reduces the chance of the ambulance driver to get the patient to the hospital which bribed him. Further, this system can be improved by adding more accuracy to the recorded sensor values.

### IX. RESULT AND DISCUSSION

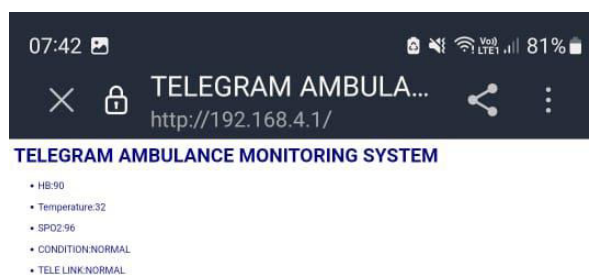


Fig.3. when patient’s condition is normal

When the condition of the patient seems to be abnormal, then it will allow to process further.



Fig.4. when patient's condition is abnormal



Fig.5. Allocation details in local telegram channel

When the patient's condition is not normal, anyone can click on the link displayed and fill in the preferred hospitals and view the vacancies and medical services available. The allocated hospital will be posted in the local Telegram channel automatically.

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