Abstract— The objective of Smart 108 Ambulance Support Service is to send the patient details, location and other data through network instead of manual processing. In this, patient details are submitted online instead of submitting manually. This reduces confusion and consumes less time. Getting quick medical attention in rural areas is a little difficult. Also the location of the hospitals could be far away. Hence when the patient arrives at the hospital it is important to give a quick treatment. This is beneficiary both for the rural and urban areas as it helps in faster sending and receiving of data from different ambulances to hospitals and vice-versa. It also helps in making quicker decisions as the information will be readily available. The services can be further improved by adding other features. Some features include other sensors, webcams, etc. Also communication can be made more available with doctors. Other physical features can be added. Overall, it is a beneficial aspect in medical industry.

Keywords— Ambulance Support Service, Manual processing, Sensors.

I. INTRODUCTION

Nowadays health care becomes a huge issue due to lack of availability of quick health services. Due to this there is shift from need based health care to preventive health care service. Health monitoring is the focus of many clinical disciplines- medicine, nursing, pharmacy, nutrition, therapies such as respiratory, physical, and occupational, and others. Although the work of the various disciplines sometimes overlaps, each has its own primary focus, emphasis, and methods of care delivery. Each discipline’s work is complex in itself, and collaboration among disciplines adds another level of complexity. In all disciplines, the quality of clinical decisions depends in the quality of information available to the decision-maker. This project is concerned with smart 108 ambulance support which provides information to the decision-maker to undertake precise decision. The patient’s data will be transferred to the database that can be accessed by the hospital staffs for quick arrangement.

The main objective is to identify the issues in the ambulance system and enhance the 108 Ambulance service for the people of rural and urban areas to address the health issues. This project proposes the smart health care system by combining the advancement in technology (sensors) and medicine. It allows quick and appropriate communication between the patient’s guardian, ambulance driver, nurse/doctor in the ambulance and the hospital.

It introduces a system which consists of web application and android application which would facilitate patient and hospital interaction. Instead of accessing the patient’s current status after their arrival in the hospital, it is better to check the patient condition in the ambulance itself. After collecting the status, it can send that information to the hospital through the app and the doctor would be informed well in advance by the hospital operator who accesses the web application.

II. ARCHITECTURE

Fig.1: Project Layout
The architecture of this project consists of four modules.
1) Admin: Is a super user of this app who is responsible for adding or deleting the ambulance and hospital. They monitor the overall system.
2) Hospital: Is the person who uses the website to receive data from the ambulance through the app. As per the data from the operator in the ambulance, the response from the hospital is sent back.
3) Ambulance: Picks up the patient and takes the patient’s readings from the sensors.
4) Patient: Is the person who needs the ambulance services.

III. DATAFLOW
The following dataflow diagram shows the working of the project. The L0 or the first level shows the overall working of the project. The L1 or the second level shows the work of admin and the patient. It shows the data being stored in the database and then accessed when required.

L0:

![Data flow diagram for layer 0](image1)

L1:

![Data flow diagram for layer 1 (patient and admin)](image2)

IV. RESULT
The following are a few results or outcomes of the project.

![Enter username and password in the website](image3)

![Add hospital details](image4)
V. OVERVIEW

This project allows the communication between different modules via the database. Instead of accessing the patient current status after their arrival in the hospital it is better to check the patient condition in the ambulance itself. After collecting the status it can send that information to the hospital through the app and the doctor would be informed well advanced in order to get ready for the quick treatment.

Work flow with respect to hardware and software:

1) The user books the ambulance using the app.

2) The another app which will be used by the ambulance operator confirms the patient’s pick up.

3) With help of the hardware sensors patients pulse rate and body temperature reading are taken and transferred to the app via Bluetooth.

4) These reading are sent to the hospital website for the availability of the services.

5) Depending on the availability, the patient is taken to the hospital.
A. Features

1) Usability: The user interface of the system should be intuitive and easy to use. We are implementing the concept of IoT. We also make use of client server architecture. We provide an android-based interface for users to access the application. This will enable the users to use the application more easily since it will be accessible through an android application from any cell phone connected to the internet.

2) Scalable and Expandable: This project can be extended by adding many other sensors to monitor the patient's health.

B. Advantages

The health monitoring acquired on the portable side transmits to the server wirelessly and can be accessed anywhere in the world.
The measurement of the heart rate and temperature is extremely easy and does not harm the human health.
This project provides low price, easy-access human health monitor solution bridging the gaps between patients and doctors.

C. Disadvantages

Internet is compulsorily needed at both server and client side. Separate kit must be provided for each individual. Carrying the kit from one place to another is difficult as it is connected to internet supply through wires.

VI. General Constraints

Delay in data transfer maybe one of the issues. There needs to be a constant internet connection for this system to work. The ambulance may not have a particular service required, and the location of the patient may not be exact. Acknowledgement from the hospital may be delayed in some cases.

VII. Conclusion

This work proposes and focuses on the pulse rate and body temperature monitoring system that is able to monitor the condition of the patient. The data is stored in the database. Thus, the personnel at the hospital can monitor and diagnose the patient's condition continuously and could suggest earlier precaution for the patients themselves. This system is cost effective and user friendly and thus its usage is not restricted or limited to any class of users. This can be implemented for various other sensors as well as for other applications. Good health care facility is a basic necessity for every individual. Hence this helps to provide proper assistance even in the rural areas.

VIII. Future Scope

Other sensors can be implemented such as blood sugar monitoring, ECG monitoring, blood group detection can be implemented. Additional Ambulance services can be included. By using capacitive touch screen the system can be implemented in hospitals to maintain patient’s data. Providing the facilities of payment can be included in the application. Voice alerts can be used to initiate the various controlling of devices and their status of operation.
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References