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# An Emergency Information Sending System for Saving Victim's Golden Hours

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**ABSTRACT**

India is one among the huge populated country in the world. Due to increase in population, vast transportation is taking place across the country. The fact says that during 2014 in India the total number of accidents are 4.97 lakh (annual) the Deaths are 1,42,485 (i.e., one death in every 3.7 minutes). The recent study states that 90 percent of the accident deaths are occurring while taking victims to the hospital. This is mainly due to delay in testing of blood group, blood pressure and other preliminary tests. These testing which seizes around 10-15 minutes of golden hour from the victim. In some cases people died during the time of testing. If such testing results is known to the doctors priorly, main treatment can be focused immediately to save the victims life. Our proposed system is to nullify the testing time by sending the tested results to the nearby hospital, before the victims reaches the hospital. This can be done by improvising the facilities available in the existing ambulance system. The proposed Emergency Information Sending System is incorporated with finger-print scanning facility, through which the finger-print of the victim is scanned and the information is sent to nearby hospital, blood bank and to their relation via GSM module for faster recovery.

***Keywords*:** Accidents, Ambulance, Finger-print reader, GSM module, Hospital, Police Station, etc.

## I. INTRODUCTION

In India everybody is having E-AADHAR which is the identity of the person provided by government. In E-AADHAR, finger print and eye retina is taken by the government of India for providing individual identity of person. Using E-AADHAR technique, we can find the personal information of particular person easily within a fraction of seconds in our computer. In our proposed idea, using E-AADHAR the complete details (including blood group) of the person needs to be stored digitally in online by the government. Using this methodology, we can easily identify the blood group of victims. By this proposed idea we

The Death survey report in the fig-1 shows that occurrences of the death in various places in that major deaths are occurred in hospitals.

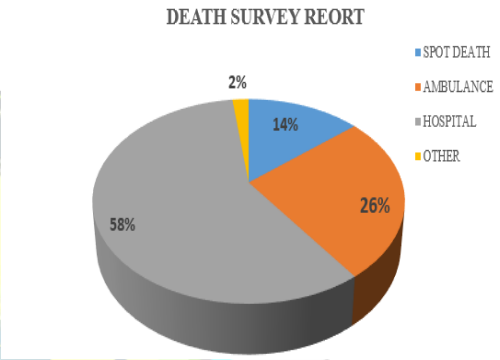


Fig-1 Death Survey Report

In existing ambulance system the prior information about blood group of the victims is not sent to hospital. It is identified only after the victim is taken to the hospital. In some cases the availability rare blood group is not known. Hence unavailability of blood or delay in blood transportation leads to death of the victim. In addition to this identity of the victim is tedious process in existing ambulance system which can be done only with help of police officers. In the proposed system this identification can be made with the help of finger print reader hence it will be easily to inform about the accident and condition of the victims to their relatives.

## II. LITERATURE SURVEY

G. Derekenaris [1], proposed a system which offers a solution to the problem of ambulance management and emergency incident handling in the prefecture of Attica in Greece. It is based on a Geographic Information System (GIS) coupled with Global Positioning System (GPS) and Global System for Mobile Communication (GSM) technologies. The design of the system was the result of a project funded by the Greek Secretariat of Research and Technology. The system will operate in the National Center of Immediate

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deals with emergency medical incidents by coordinating and routing ambulances to appropriate hospitals as well as offering medical care to patients during their transport to hospitals.

Luis C. Criollo Ordóñez [2], describes the study of an innovative method to send an audio signal from an ambulance in order to notice the presence of the ambulance with the aim to reduce the travel time of the ambulance from the medical home to the place where the emergency occurs and vice versa. The signal will be heard on the radios of the vehicles on a street or avenue determined, this signal will be transmitted in FM and will interfere in radios of all vehicles that are within range of the antenna, and for this purpose the five most popular FM radio stations in the city of Cuenca-Ecuador have been selected.

Samir El-Masri [3], proposed a new advanced medical emergency system to facilitate and computerize all the processes involved in an emergency. The proposed system contacts the ambulance emergency system, locates the correct and nearest available ambulance, accesses a Smart Online Electronic Health Record (SOEHR) that can critically assist in pre-hospital treatments; and identifies availability of the nearest available specialized hospital all through communication with the Hospital Emergency Department System (HEDS) which provides early and continuous information about the incoming patient to the hospital.

Tandrima Chowdhury, proposed an Automatic Ambulance Rescue System (AARS). The main idea behind this scheme is that the ambulance can reach smoothly to hospital in time, by mechanically controlling traffic lights in path. The ambulance is controlled by control unit which gives the shortest path for reaching hospital and controls traffic lights. The sensor senses the spot and the nearest ambulance reaches the accident spot. The traffic lights in the path of the ambulance are controlled. The ambulance is guided to hospital by server through shortest route. The vehicle unit installed in vehicle senses the accident and sends the location of the accident to the main server in the ambulance section. The main server finds the ambulance, nearest to the accident spot and also shortest path between ambulance, accident spot and nearest hospital. [4] discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power.

Sudarshan S [5], proposed an Auto Hospital Search, a cloud-based crowd sourced system that helps disaster victims locate nearby hospitals that meet their medical requirements using data provided by a distributed network of volunteers. distance, resource and the current resource utilization data available to the ambulance. We use a system of ranking of hospitals for each victim based on the above parameters that allows the victim to make an intelligent and informed choice from a manageable list of options. Finally, we compare the performance of our ranking scheme against a naive find-nearest hospital approach using discrete event simulation

## III. PROPOSED METHOD

The proposed system consists of optical fingerprint scanner, Arduino Micro-controller, LCD Display, Keypad, GSM kit, PC Interfacing Switch and Battery. Initially first aid is given to victim in ambulance and at the same time, victim"s finger is scanned by finger print reader.

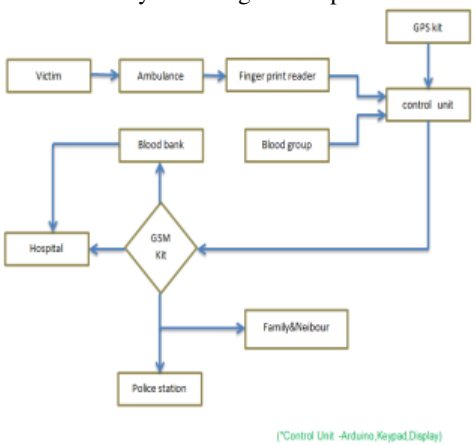


**Fig-2:** Block Diagram of the Proposed System

The scanned finger print is fed through arduino microcontroller which process the data from the finger print and display the personal information of the victim which matches in database and the victim"s name and Blood group is displayed in LCD. For detailed information like age, address, contact number will be displayed by pressing appropriate keys in keypad.The blood group is dectect using two techniques are widely used for blood group analysis. Among these the most widely used one is ABO technique.

In this antigen A, antigen B and antigen D is used for analysing the blood group. According to ABO and Rh blood grouping system, the person can belong to any one of the following eight blood groups: A positive, A Negative, B positive, B Negative, AB positive, AB Negative, O positive, O Negative. While doing the blood group analysis by manual process in laboratories, a drop of antigen is added with a drop of blood sample and technician has to wait for few seconds, to check whether the

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Fig-3 shows the O Positive blood group sample on adding Antigen-A, Antigen-B and Antigen-D respectively. In this blood sample it was observed that the clumping occurred only for the Antigen-D (Rh –positive and Negative).

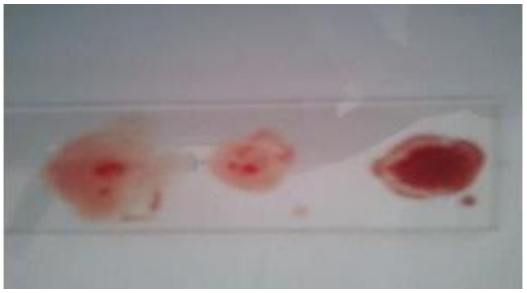

**Fig-3:** Clumping in O-Positive blood group

In this proposed system, the TCS230 colour sensor is used for colour sensing.The sample blood wil be taken as the reference color.If the clumping will occurs blood will be in same colour.If there is no clumping and it set binary value as 1.If the blood colour will not be change then binary value will set as 0 by the output of binary values the final blood group is decided. The binary output and corresponding blood group given below,

| Anti A | Anti B | Anti D | Blood group of individuals |
|---|---|---|---|
| 1 | 0 | 1 | A positive |
| 1 | 0 | 0 | A negative |
| 0 | 1 | 1 | B positive |
| 0 | 1 | 0 | B negative |
| 1 | 1 | 1 | AB positive |
| 1 | 1 | 0 | AB negative |
| 0 | 0 | 1 | O positive |
| 0 | 0 | 0 | O negative |

After getting necessary information the victim can be sent to nearby hospital and through GSM information is conveyed to blood bank and victim˝s relation.

The proposed Emergency Information Sending System is shown in fig-4.


**Fig-4:** Proposed Neoteric Ambulance System

If the victim is in critical condition, by pressing emergency „*˝ key the GSM kit send a signal "emergency" to arrange prior facilities like ICU ward and other first aid kits in hospital. In some cases it is necessary to inform to police officers about the accidents for proceeding treatment in hospitals. In such condition by pressing „#˝ key the GSM kit will send the victim information to nearby police station.

## V. HARDWARE RESULTS

The hardware results of our proposed method is shown in fig.5. The LCD, GSM module, keypad and finger print sensor is connected with digital input/output of the Arduino micro-controller.

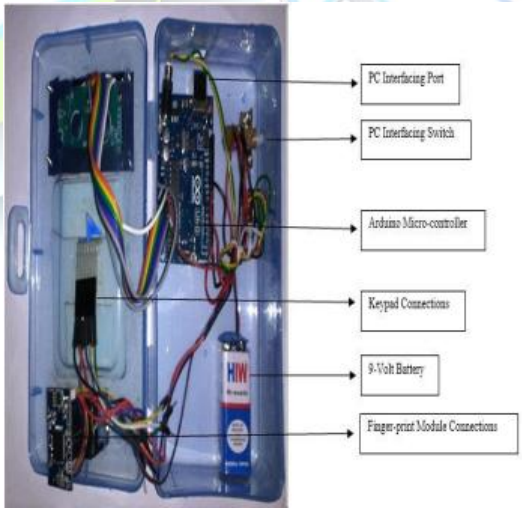


**Fig- 5:** Overall Internal Hardware Arrangement

The power supply for arduino board is given by

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board. For updating details from personal computer, PC Interface Switch is used to synchronize the information from personal computer. Through PC Interfacing Port arduino micro-controller can be connected with personal computer.

## VI. CONCLUSION

The proposed Emergency Information Sending System ensures detection of victim‟s information precisely and sent the status to hospital to save the golden hours of the victim. It is economical and it can be easily handled by everyone. In future, the proposed system can be nationalized by synchronized in E-AADHAAR database with detailed information. It can be implemented in hospital and ambulance for updating their medical test results for further betterment in medical treatment. In addition, GPS tracker sensor to be interfaced with arduino to find out nearest hospital and Ambulance services.

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