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Android Application for Medical OPD Services

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ABSTRACT: Medical OPD(Out Patient Department) Services application will help in locating and booking the ambulance, identifying the nearby hospitals and pharmacy, identifying the blood-bank and blood donors, application also indicates steps to be followed for first-aid precautions. The application provides the ambulance tracking system for both the application users and hospitals. The ambulance driver can send the alert message to the traffic control room to clear the traffic in case of emergency and also he can send the alert message to the hospital to make prior arrangements with respect to patient's health condition.

KEYWORDS: OPD; First-Aid; Ambulance; Hospitals; Patient

I. INTRODUCTION

OPD means an Out Patient Department of the hospital. It is the section of the hospital where patients are provided medical consultations and other allied services, such as Ambulance services or emergency services which treat illnesses and injuries that require an urgent medical response, providing out-of-hospital treatment and transport to hospital. Emergency medical conditions occur through a sudden effect in the body or mind, through injury, infection, obstetric complications, or chemical imbalances.

Emergency medical services (EMS) to treat these conditions include rapid assessment, timely provision of appropriate interventions, and proper transportation to the nearest appropriate health facility by the best possible means to enhance survival and prevent disability.

The goal of Medical OPD Services is to provide emergency medical care to all who need it. Advances in medical care and technology in recent years have expanded the parameters of what had been the traditional domain of emergency services. These services are not only limited to actual in-hospital treatment but also from arrival to stabilization. Emergency Services also includes pre-hospital care and transportation.

Advantages

- Application helps the ambulance driver in finding more accurate location of the user.
- Application can help user to reduce time complexity.
- Application helps in finding the nearby Hospitals and Pharmacy.
- It also helps user to know whether the Hospital or Pharmacy is Open/Closed.

Motivation

The telephone communication takes much time and also the exact details will not be registered and sometimes miscommunication may happen while using telephone communication.

Proposed System

The following features of the emergency medical system(EMS) helps to overcome in the areas where the current system is lacking.

To enhance and avoid these problems, an Android application with built in GPS technology will be utilized by the patient to send coordinate and user details to the ambulance driver's device which will be installed to all the ambulance's device hence able them to locate and reach the user in no time. The hospital will be able to track the ambulance location and also by receiving the alert message from the ambulance and they can make prior arrangements for the emergency cases.

II. RELATED WORK

To understand the current problem in depth, researching into various resources are needed to prove the reliability of the current system. Here, we will be analysing the problems statement and justifications.

➤ **Emergency Medical Service (EMS)**

Emergency medical service (EMS) is a service which is responsible for leading the department in providing proper planned and organized emergency management resources which is capable of responding to public emergencies whenever it is need. Ambulance can be categorize as a limited resources in EMS and since the congested and rapid development of urbanization and concrete jungle in each and every part of the world, the route to search and rescue for human shelter is very complex. This reflects the performance of the ambulance driver to reach the emergency spot on time. These issues helps to identify that the need and responsibility of an EMS is vital and equally important to save lives, utilizing and improvising this system will sure helps the community to be safe and worry less on the service provided by the authority.

➤ **Remote Panic Button**

The remote panic button works in such way that, if the user press the “Help Button” once, it sends an emergency triggering signal to the monitoring system and displays a message to notify the user that the remote panic button has being triggered. The controller will read the status of the unit and sends message (SMS) to the emergency service immediatly. From the article we can conclude that panic button can be used to transmit the notification or signal to ambulance when the user are alone or unable to help themselves in certain circumstances. This will help them request for help which required the use of the service of ambulance. It saves time from calling and request for help which will slows down the rescue process by any means.

➤ **GPS and GIS for Ambulance**

GPS stands for Global Positioning System is a satellite-based navigation system, the GPS Receiver retrieves the location information from satellite in the form of latitude and longitude real time reading. This system can be used to track real-time positions of a vehicle and smartphones which whenever the GPS setting is switched on GIS stands for Geographic Information System which is a software used for linking spatial and non-spatial data. Ambulance service in a congested area like Shah Alam, Kuala Lumpur and many major cities in Malaysia facing much constraints such as traffic lights, tolls, and devastating heavy trafficked roundabouts. If an inexperienced ambulance driver has taken a wrong route, the driver will result on late arrival on the emergency scene. GPS and GIS can be implemented on the ambulance to track their location by the system archive and utilize the service of track the user and find the best route to the user as fast as possible. Integrated GPS component in the vehicles and smartphones will be useful for this project which we will be utilizing the main function in our application.

III. PROPOSED ALGORITHM

A. Modules

3.1 Ambulance Module

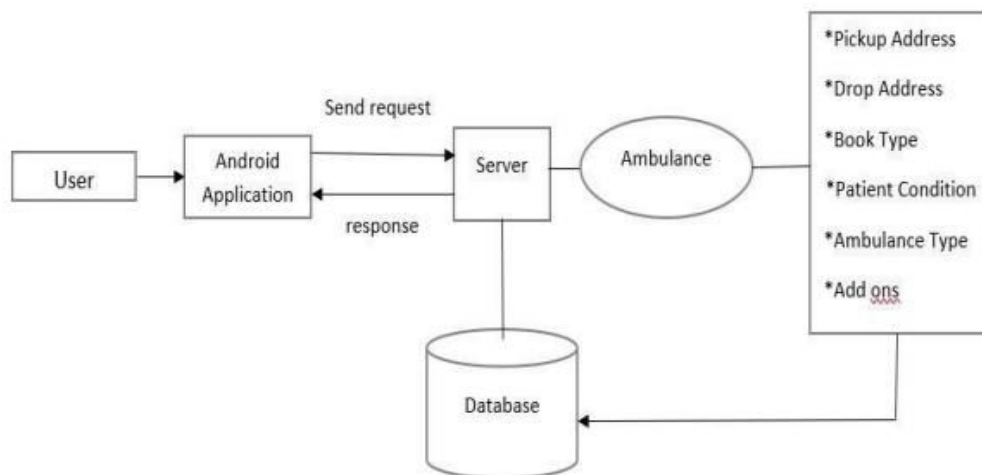


Figure 1: Ambulance Module

Figure 1 illustrate, on launching the application first device will automatically detect the location of user using the GPS devices. Later depending on the user’s requirement/need user will choose option of finding nearby ambulances. Then the user will select the nearby Hospital i.e. the Drop location and also user select type of booking patient condition and type of ambulance based on emergency requirement. Smartphone application will read the data from response and plot the coordinates or information according to the user’s request.

The system will be functioning as below:

- Sends notification to Ambulance Driver.
- The user’s pickup and drop location along with the type of booking and add on information will be sent to ambulance driver.
- Cuts off waiting time.
- The user doesn’t have to call and check for availability of the ambulance anymore.
- Ambulance will be able to track the location of the user with GPS.
- Notifications that sent by the user will provide the GPS location of the user and also provides the user’s pre-registered address.
- Safe and reliable.
- Provides the user all the information of the ambulance that accepted to fetch user – Ambulance name, Driver’s name, Ambulance number plate and Driver’s phone number.

3.2 Hospital and Pharmacy Module

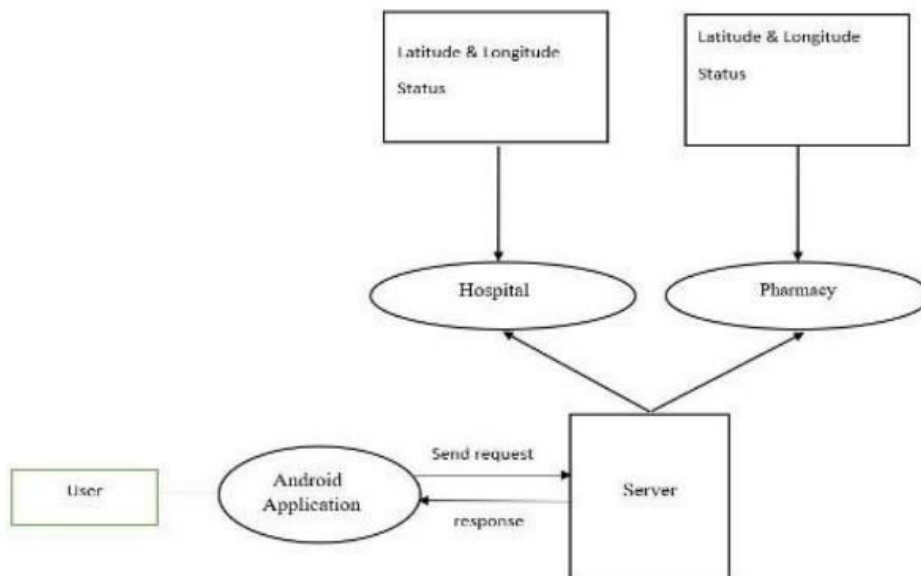


Figure 2: Hospital and Pharmacy Module

Figure 2 illustrate, on launching the application first device will automatically detect the location of user using the GPS devices. Later depending on the user location nearby Hospitals and Pharmacy are listed. The user can also check whether the Hospital or pharmacy is open or closed. If required the user can also request for the direction from their current location to required Hospitals or Pharmacy.

3.3 Find Blood Module

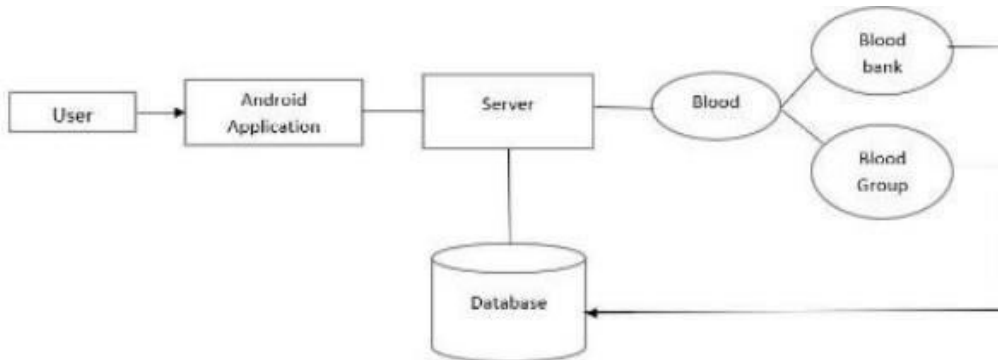


Figure 3: Find Blood Module

Figure 3 illustrate , on launching this module the user can search for the required blood group in the application database for donors, whether it is available or not. Otherwise the user can also search for the nearest blood bank based on his current location.

3.4 First Aid Module

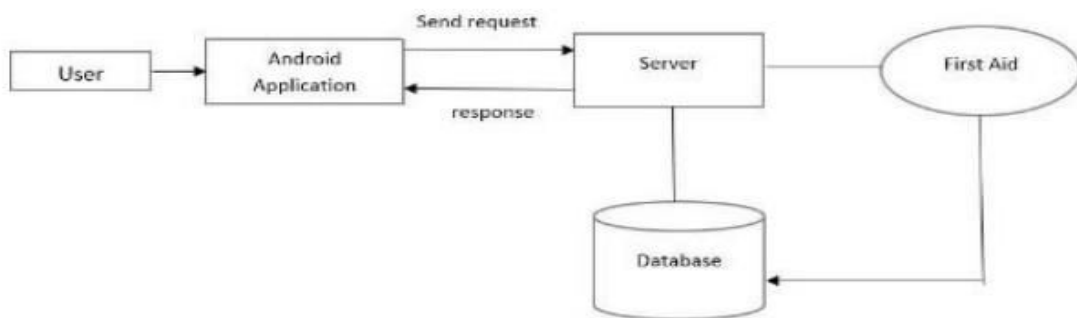


Figure 4: First-Aid Module

Figure 4 illustrate, on launching this module the user will get quick solutions or home remedies for minor injuries or health issues. Such as Burn, Allergies, Choking, Bleeding etc.

IV. SYSTEM ARCHITECTURE

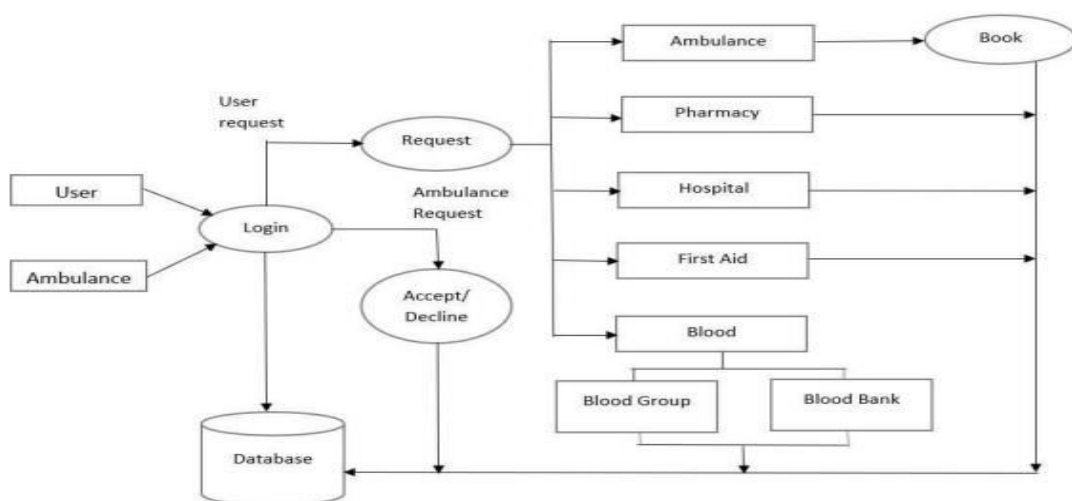


Figure 5: Overview of Medical OPD Services

Figure 5 shows the Overview of the Medical OPD service. At first, the users and the ambulance drivers enter the login credentials. These data are stored on a server for future use. If the login details are valid, the application displays the main screen for that particular role what the person who is using the application has chosen. The details provided by the user are shared with the ambulance driver. The details of the ambulance driver are shared with the users. After login process, the user can make a request for an ambulance nearer to his/her location. The ambulance driver can accept this request upon which he will be displayed a map showing directions to the user's location, then the Ambulance Driver will drive to the destination address. The travel history will be stored in the database.

V. EXPERIMENTAL RESULTS

The results are shown below:

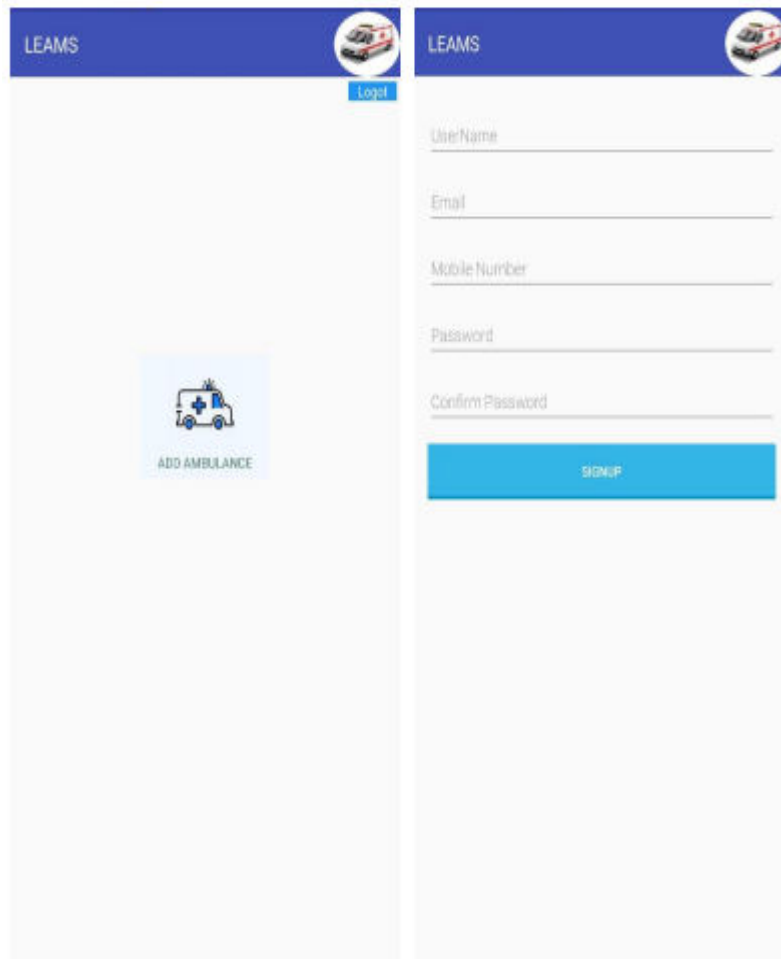


Figure 6: Admin Module

Figure 7: Add Ambulance

The above figure 6 is the admin home page, where he can add new ambulance. The above figure 7 is the form page, where the ambulance driver's credentials are to be entered.



LEAMS	
Davanagere Heart Hospital 9th Main Road, MCC B Block, MCC, Davanagere 3.3/5 MAP	OPEN
City Central Hospital Akkamahadevi Road, 17, AVK College Road, Prince Jayachamaraja Wodeyar, Davanagere 3.3/5 MAP	OPEN
Ashraya Hospital 1977/1-2, Shamarur Road, MCC A Block, Davanagere 3.8/5 MAP	OPEN
Latha Nursing Home AVK College Road, Prince Jayachamaraja Wodeyar, Davanagere 3.8/5 MAP	OPEN
City Medical Center Medical College Road, MCC B Block, MCC, Davanagere 3.6/5 MAP	OPEN
Sanjeevini Hospital MCC A Block, Davanagere 4/5 MAP	OPEN
Asthena Allergy Chest Centre Dr B Vidyasagar, #3462 2nd main 6th Cross Road, MCC B Block, Davanagere 3.5/5 MAP	OPEN
Sukshema Hospital MCC B Block, MCC, Davanagere 4.1/5 MAP	OPEN
Bapuji Child Health Institute and Research Centre MCC B Block, MCC, Davanagere 4.2/5 MAP	OPEN
Chigateri General Hospital HOSPITAL ROAD, Davanagere 4.2/5 MAP	OPEN

Figure 8: List of Hospitals

LEAMS	
Chethana Pharma #1634 8th Cross, Davanagere 4.3/5 MAP	OPEN
Apollo Pharmacy No 1680/3, BIET College road, Siddaverappa Layout, Davanagere 4/5 MAP	OPEN
MedPlus Anjineya Extension Near Anjineya Temple, 1st Main 1st Cross Road, Anjineya Extension, Anjineya Badavane, Davanagere 3/5 MAP	OPEN
MedPlus D I E T Road No 3308, 11, BIET Road, MCC B Block, Basavastree, Davanagere 4.6/5 MAP	OPEN
MedPlus Vidya Nagar 3RD Busstop Opposite Shiva Parvathi Temple, D No 1660/14, Ward No 34 3rd Busstop, Opposite Shiva Parvathi Temple, Tanalabalu Extension, Etl, Vidyanagar, Davanagere 4.1/5 MAP	OPEN
ANTAHKARAMA CLINIC PHARMA 2nd Cross 8th Main MCC B Block Near Water Tank Park, Davanagere 5/5 MAP	OPEN
MedPlus Hadadi Road No 623/4, Jayees Complex, Hadadi Road, Shrinivasa Nagara, Davanagere 5/5 MAP	OPEN
Apollo Pharmacy No 608, Ward, near Supermarket, No 34, 2nd Main Road, Nijalingappa Layout, Davanagere 3.5/5 MAP	OPEN
MedPlus MCC A Block Davanagere High School, Near, No 2518, Ward No 29 Mmc: A Block, Bakreshwar 4.2/5 MAP	OPEN

Figure 9: List of Pharmacy

The above figure 8 is the list of hospitals, listed down based on user's location. The above figure 9 is the list of pharmacy's, listed down based on user's location.

Figure 10: Find Blood

LEAMS	
Bapuji Blood Bank MCC B Block, MCC, Davanagere 4/5 MAP	OPEN
CG Blood Bank Davanagere 3.5/5 MAP	OPEN
Life Line Blood Bank, Karnataka Hemophilia Society, Davanagere #1138, Ring Rd, behind KSFC, S S Layout B Block, Nijalingappa Layout, Davanagere 3/5 MAP	OPEN
Davanagere Blood Bank H.NO 348, Mahaveera complex, 8th Main, 8th Cross Rd, Davanagere 3.3/5 MAP	OPEN
Basavasthara Health Blood Storage Center Pavilion Road, P.J. Extn, Davanagere 4.3/5 MAP	OPEN
Chigateri District Hospital Blood Bank K. T. Jambanna Nagara 5/5 MAP	OPEN
Bapuji Educational Association S. S. Institute Of Medical Sciences Research Hospital Blood Bank S O G Colony, Shri Ramenagara, Davanagere 5/5 MAP	OPEN
Lifeshare (Blood Donor Search) 3049/17 14th cross siddaverappa badavoni, Davanagere 5/5 MAP	OPEN
Indian Red Cross Society Devanaj Urs Badavane B Block, Davanagere 5/5 MAP	OPEN

Figure 11: List of Blood Bank



The above figure 10 is the blood bank module, where user can search for types of blood groups and also blood banks. The above figure 11 is the list of nearby blood bank based on user's current location.

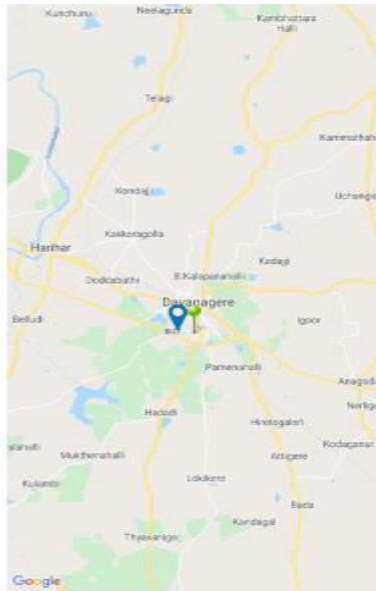


Figure 12: Listing of Ambulance

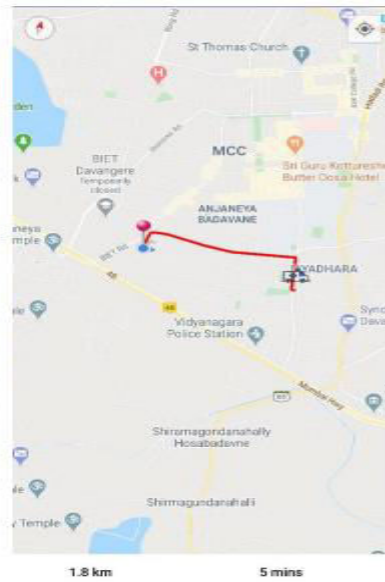


Figure 13: Tracking Page

The above figure 12 is the map, where the available ambulances are shown. The above figure 13 is the tracking page, where user can track the booked ambulance.



Figure 14: Request Ambulance

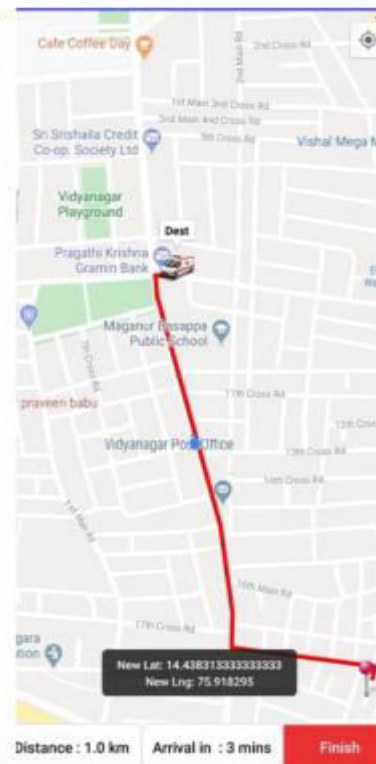


Figure 15: Map to User's Location.

The above figure 14 is the pop up message received by ambulance driver, which contains pickup and drop location. The above figure 15 is the map shown to ambulance driver.

VI. CONCLUSION AND FUTURE WORK

An idea is proposed for saving a patient's life in a faster way possible. It is beneficial for users in case of emergencies as it saves time. With this Application, the ambulance can reach the patients, as location is given through the app and can provide necessary equipment required for the patient. Information about the pharmacy's provided helps in getting the appropriate pharmacy which is suitable for the patient's treatment.

The challenges people in the rural areas with respect to public health care facilities like medical emergency services. In particular, patients found it difficult if not impossible to access medical ambulance transport during emergency situations which consequently, leads to loss of lives that could be prevented. With such challenges and others, proposed a solution in the capacity of Mobile-based ambulance transportation system. It is aim at improving ambulance transportation availability and other services when requests are made without having to call or wait for long time. Project is designed and implemented a prototype to demonstrate the operation of the system to show its effectiveness with respect to the current systems. Based on its mode of operations, we believe that if adopted for used by people living in the rural areas, not only rural areas but areas where modern pharmacy or health facilities are not located. Moreover, it could go a long way to make their lives easier and prevents the loss of lives of thousands of people needing emergencies. [3]

Our future work will be to improve the system by incorporating technologies of Android application to scale it up and link it with all nearby hospital, pharmacy and blood banks such that if a service is not available in one, multiple hospital, pharmacy and blood banks that offer such service can be suggested immediately alongside its distance, arrival time and the availability of ambulance, hospital and so on to attend to the emergency situation.

REFERENCES

1. International Journal of Science, Engineering and Technology (Journal). Ambulance EMERGENCY RESPONSE APPIICATION MuhdZafeeruddin Bin MohdSakriya.
2. International Journal of Scientific & Engineering Research, Volume 9, Feburary-2012 ANDROID Application FOR EMERGENCY Medical ASSISTANCE (DOCTORS NEARBY) Dhanesh Sharma, Priyanka Dubey, Navin Singh.
3. International Journal of Computer Applications (0975 – 8887) National Conference on Advances in Computing, Communication and Networking (ACCNet – 2016) 23. Smart Ambulance System.
4. <https://www.entrepreneur.com/article/300330>
5. <https://bohatala.com/ambulance-management-system/>
6. <https://en.wikipedia.org/wiki/Android>
7. <https://en.wikipedia.org/wiki/GPS>



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