

## International Journal of Innovative Research in Science, Engineering and Technology

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# CURE CARE - A Bio Medical Android Application

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**ABSTRACT:** India being a developing country, one of the most pathetic is the health care sector. Where most of time the reasons for the deaths and worsening the situation of patient are majorly delay in emergency help or doctors at hospitals and the delay or unavailability of ambulances. The total number of state owned ambulances are totaling to approx. 7000 for the total population of 1.3 billion i.e 1:1,85,000. The World Health Organization says there should be at least one ambulance per 100,000 people. A study by the Delhi-based All India Institute of Medical Sciences in 2012 found that 28% of the 70,768 emergency calls received between March 2009 and May 2010 in the city were refused because of the shortage of ambulances. India is short of nearly 500,000 doctors, based on the World Health Organization (WHO) norm of 1:1,000 population, according to an India Spend analysis of government data. With more than 740,000 active doctors claimed doctor-patient population ratio of 1:1,674, worse than Vietnam, Algeria and Pakistan. The current project focus on the best utilization of available ambulance services with various private as well as NGO partners, the other focus is on providing the patient with availability of doctors with particular specialty near them. As every second is precious for a patient.

**KEYWORDS :** PHC, Emergency medical cases, Android platform, Ambulance and Doctors Database, GPS.

### I. INTRODUCTION

Modern hand held devices such as smart phones and PDAs have become increasingly powerful in recent years. The smart phone is a new technology that combines mobile communication and computation in a hand held sized devices facilitating mobile computing at the point of care. The health care system is highly mobile in nature, involving multiple clinical locations such as clinics, inpatient ward, outpatient services, emergency departments, operating theaters, intensive care units, laboratories etc. As such working in the health care professionals as well as communication and collaboration among different individuals, including their colleagues and patients. Health care professionals mainly used pagers for mobile communication until the wide availability of all phones in 1990's. The advent of mobile Personnel Digital Assistant's during 1990's enabled health care professionals to organize their contacts and calendar electronically, adding another device in their pockets. The confined functionality of a pager, a cell phone and a PDA is now replaced by single devices called Smart phones, which is becoming new popular among health care professional as well as general public.

### II. LITERATURE SURVEY

What are the statistics on deaths due to delayed emergency response in accidents/cases? Depending on your luck, the first driver to spot you and pull over to help might be any kind of medical facility professional (doctor, nurse, CAN, midwife, dentist). Any kind of public safety professional (EMI, COP, firefighter, lifeguard). A trained emergency medical responder among them, road accident, however contribute the largest number of deaths or injuries. These accidents are increasing at an alarming rate of 3% annually. About 10.1% of all deaths in India are due to accidents and injuries. A vehicular accident is reported every 3 minutes a death, every 10 minutes on our records. 56,000 women succumb to pregnancy related complications in India every year-the highest across the world Rajasthan, followed by Assam, Uttar Pradesh and Uttarakhand has the highest maternal mortality rates the number of women aged 15-49 dying

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due to pregnancy related complications per 100,000 live birth in India, according to report by the register general of India.

Women continue to give birth in deplorable conditions at unhygienic and ill equipped health facilities. While India's public health systems grapples with a death of health facilities, shortage of human resources in one of the biggest impediments to the functioning of exiting public health facilities in India. The absence of a healthcenter nearby also means that pregnant women have to travel long distance to avail medical services ANM's(Auxiliary Nurse Midwife) nearby ever visit the village. Nearly 27% of the total deaths in India happen with no medical attention at the time of death, according to the 2013 civil registration date released by census directorate. Date based on 27 States and Union Territories also indicated that only 43% of the total deaths happen in institutions and only 3.9% of the rest under the care of a qualified allopathic doctor.Though there are thousands of community medical centers across the country, many of these do not have facilities to do minor surgeries which will save a person's life. For example, a person with appendicitis may require an emergency surgery but due to lack of access to proper hospital, he would have been allowed to die.A majority of the patient who die without medical care would have suffered a heart attack, brain stroke or pregnancy related problems.The deaths without medical care mostly happen in rural areas where medical care is poor and there are many vacancies in hospitals.Rural transport infrastructure and means of transport are crucial to overcoming the potentially fatal 'three days' in health care (particularly parental care), the decision to seek health care ,the travel to reach care and the treatment within the health care system (including referrals )all depends on access to transport . Where people are far from roads , their decision to travel is influenced by theby the problems of traveling by human porter age, stretchers, animals, bicycles or motorcycle. Good accesses to infrastructure and transport service are needed to ensure medical staff and supplies are in health centers.

### III. CASE STUDY

India plans to establish some 200 new medical colleges in the next 10years to meet the projected huge shortage of 600,000 doctors. Shortage of doctors for primary health care has been hyped. Rural health services are totally in need of well-trained specialists and super specialists.The basis for arriving at this huge projected shortage is the recommendation about minimum doctor's population ratio of 1:1000 made by 'High Level Expert Group (HLEG) for universal health coverage' constituted by the planning commission. The concept was originally developed by the Joint Learning Initiative (JLI) and subsequently more or less adopted by the WHO. The two parameters used by the TLI to arrive at the concept were magnitude of coverage of measles immunization and births conducted by skilled attendant. Both of these are low level medical skill that could be easily done by paramedics, however, the issues is more complex as there are several caveats to the recommendation. Several nations and India states have achieved health indices of global standard with much lower doctor population ratio.As survey and reports figures that in a region or health care, one doctor is aligned for at least 1000 patients but actually this is not practically followed by most of doctors. Also what happen most of time is any specialist doctor is over loaded with more than 1000 patients so it is very necessary to check what are the rest of doctor is doing. For example in government hospitals this scenario is found in practice. Due to this negligence many of patients do not even get treatment or appointment, so the reason should be rectify in such cases and proper settlement of doctors along with a number of patients should be done so that any patient can get best nearby available doctor.

### IV. PHC OVERVIEW

Public health scenario:- In India, in the health sector the progress has been very impressive since independence infant mortality rate (IMR) has dropped from 150 to 50 ( a threefold reduction), the maternal mortality ratio (MMR) declined to folds from 2000 to 200 per 100,000 live births and the life expectancy at birth has gone up from 31 to 65 year. Sixty year ago the total number of physicians was 47,524, with doctor population ratio of 1 to 6300. Today the number of registered medical practitioner is 840,130 (a 17 fold increases). Despite the population explosion (population has tripled) the overall doctor population ratio is now 1:1800 which reflect a 3.5 fold improvement. Primary health centers (PHCs) are the cornerstone of rural health delivery system. Each PHC is manned by at least one allopathic doctor. As

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against the common perception of gross shortage, the actual shortage of basis doctors is only 12 percent (2900) to man PHCs, that too mostly in the northern states.

India today faces dual challenges: It must improve its health services and simultaneously, develop high tech interventional/curative medical service both for its own people and also for its international programmers such as medical tourism and drug trial. It also happens to the people that the people suffering with particular disease and he does not know that where doctor available. Most of the times people run towards the PGIs and big hospitals in metro cities but specialist doctors available in their town due to this load on the some doctor's effects to the patients. They have to wait for their turn, sometimes the number comes in two days to meet to doctor because they do not know that specialist doctor also available in their city. So by developing this application we overcome all this effects due to which patient suffering and get better treatment with time. By using this application people find the particular doctor or particular treatment within the nearest hospital without thinking about transportation rather doctor available or they have to sit outside while number not come to meet. The tiny gap which is responsible for the death or for worst situation can overcome when patient reach to doctor without any obstacles.

## V. METHODOLOGY

In this application they can find hospitals, doctor names and their mark of excellence and specialization and what type of treatment given by particular hospitals. By making the records of Govt. Hospitals, PHC and private hospitals it will make HIS system. That makes the bridge between govt. hospitals to private hospitals because if the treatment is available in front of govt. hospitals than patient is easily transferred to that, not for the PGIs that is 100 km far from that govt. hospitals. Due to this the price of treatment also reduced by private firm because two way communication developed between govt. and private hospitals. And State govt. and Center govt. also watch the private doctors that how much they taking from the patient for their personnel business.

And govt. also understands that where the govt. hospitals locking why people approaches private hospitals. The union health ministry's struggle for funds to drive public health programs continues unabated as the budget for the National Health Mission remained stagnated at Rs 19000 crore. As per the 12<sup>th</sup> five year plan document, the total public funding by the center and states, on core health is envisaged to increase to 1.87 percent of the Gross Domestic Product (GDP) by the end of the twelfth plan. The Draft National Health Policy 2015 also envisages raising professionally the public health expenditure to 2.5 percent of the GDP, Shripad Yeaso Naik, and Minister of state, health and family welfare told at Rajya Sabah. WHO statics state that more than 52 lakh lives are lost annually in India and the death rate in urban India is expected to rise by 42 percent by 2021. We can also find how much doctor we need how much seats are vacant. NGO's also contribute to help in this application by making following of doctors, people who need financial help, transportation, providing medicine. Bio-Medical equipment's- the local manufacturing those provide equipment at low price can help people, they can also provide implant at low price, by using this application manufacturing direct meet to the patient.



Figure 1 - The CURE CARE

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Figure 2 – Main Dashboard of App

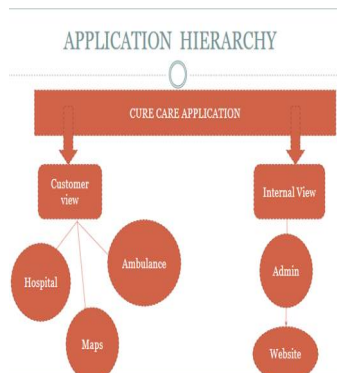


Figure 3- Working Hierarchy

## VI. PROPOSED WORK

### ANDROID App 6.0

- Application having three access
  1. Patient Access
  2. Hospital Admin Access
  3. Doctor Access
- It is a GPS based Access
- Having search bar with options:-
  1. Problems
  2. Doctor Specialization
  3. Need Transportation
  4. Optional- History, Call back
  5. Feedback

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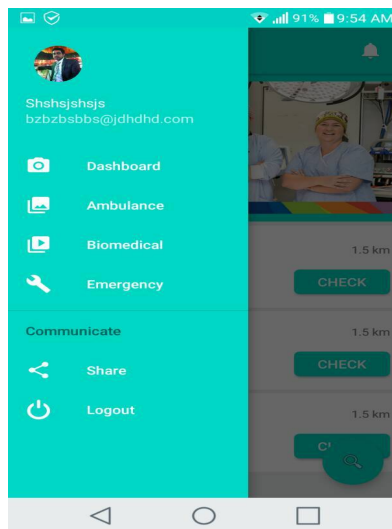


Figure 4 - Overview Options

## VII. WORKING OF APPLICATION

This application having all details of hospital, doctors working, doctor specialization, treatment, and equipment availability. If doctor want that the contact number also available for patients, then doctor number also shown. Show all PHC, Govt. Hospitals locations. Govt. Health care are on the first priority basis. Available or transportation service also works on GPS. Options for the Ambulance- Normal fully Hi-tech having all emergency equipment like CPR, telemetry facilities Available or transportation service also work on GPS Bio-Medical list with pictures. Bio-Medical Equipment. Online Delivery.

It has four platforms:-

- Patient
- Doctor
- Hospital
- Driver

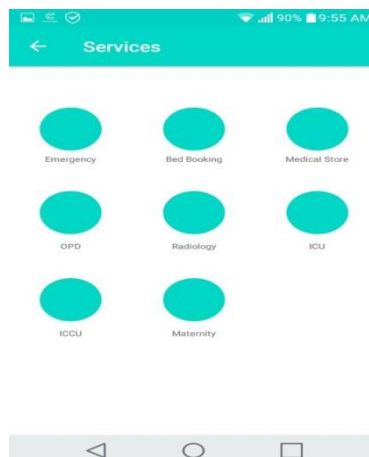


Figure 5- Services for Patient

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### Patient Platform:

It shows search bar as per the situation of the patient like normal, critical illness or accidental. On the basis of these situations it will show below avail-abilities. Numbers of beds available in hospitals. Available doctors in hospital and resident doctors. It will also show their distance along with location and contact number and available hospital ambulance and other ambulance. We are also adding the feature where if pregnant women used our services so our hospital faculties will continuously do follow up with patient within a particular time period considering their entire case along with complications if there would be any. It also shows the blood bank location and their contact number and once patient visit these information automatically all registered bank will received the patient contact number. Labs also connected with this like path labs or radio labs, so that if patient not comfortable to go hospital or the hospital is far away from patient then by using this application patient can search their nearby labs and patient can contact to labs and if possible the person registered with labs contact with patient and collect sample from patient home.

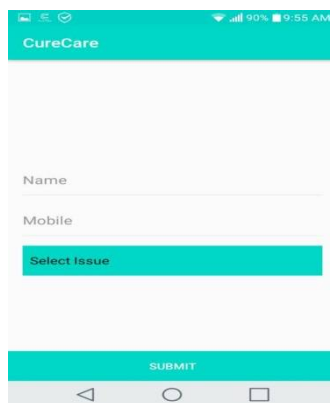


Figure 6 – Account Preface

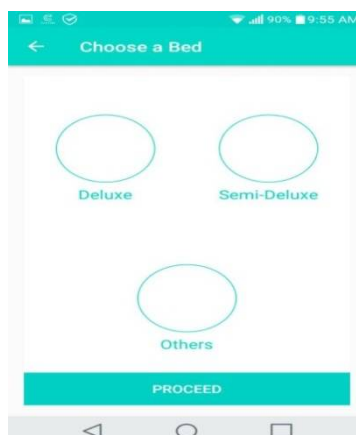


Figure7-Ambulance options

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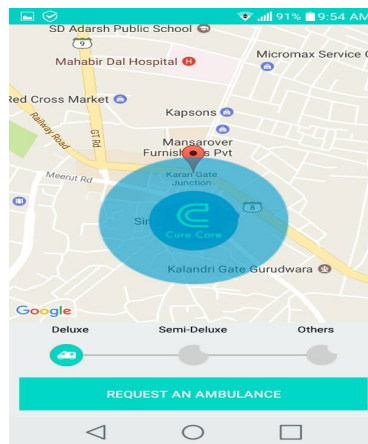


Figure 8 – GPS location preface

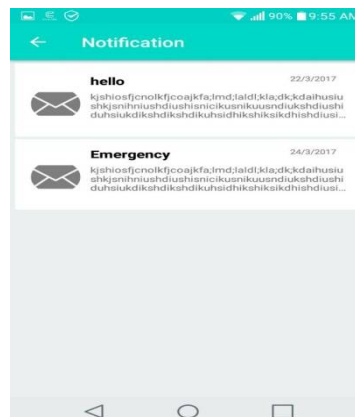


Figure 9- Notification received.

## Future perspective

- Nursing: some people those are critical or old need nursing service at home.
- Bio-Medical diagnoses at home like x-ray and changing of implant.
- Alert
- Feedback about some hospitals so that hospitals can work to improve their services.

## Hospital Access

In this platform one can see all the availability of doctors. Treatment they provide Number of beds available in hospitals- (deluxe – semi deluxe if private hospitals).Free checkups and diagnosis going on at hospitals.OPD-timings.Radiology diagnosisavailability. Schemes.Availability of Ambulance and all other updates also shows to the patient so that they can use and get help.We also provide that stats of the area based on data that which type cases are more in that area so that they can improve or concentrate on that area ofproblems.Feedback alert provide by any patient.

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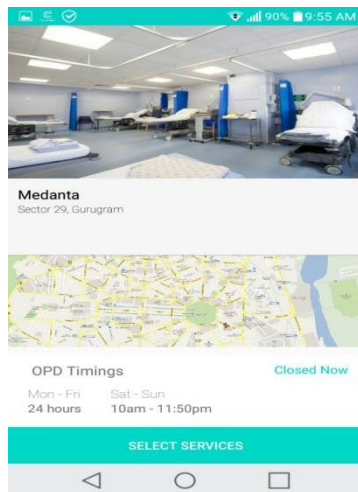


Figure 10- Detailed hospital description.

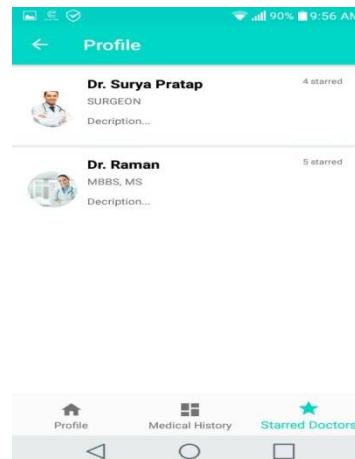


Figure 11- Doctor's Profile

## Doctor Access:

It shows their availability ON/OFF. Update their professional work. Specialization if doctor wants to change or update. Appointment of patients. Duration of work. Alert by hospitals/patients for emergency. Show related hospitals where doctors visited.

## Driver Access App:

- Patient locations.
- Hospitals locations.
- Share patient contact details.
- Shortest path.
- Urgency (critical issue) – According to this patient problems based diagnostic systems, like patient got heart attack then cardiac related equipment loaded into the ambulance.
- SOS Service- If patient do not feel that the driver not comfortable or misbehave or drunk then another ambulance provide to the patient, and if equipment are not available in the ambulance then it will change immediately the service.

## VI. CONCLUSION

Considering the poor availability of ambulance and health facilities in India, we have developed an android app Cure Care which has four platforms specifically designed by keeping in mind the needs of patients. Our app lets the patient to reach the hospitals near their location and contact specific doctor according to their ease and availability which would help to lower down the expenditure and delay time for necessary treatments.. Additionally by this application a record of vacant seats could be maintained that will help if any patient is in queue. It will help to improve health sector and approachable to the patient without consuming more time without cost.





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