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CALL FOR LIFE -DIGITIZING HEALTHCARE SERVICES

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ABSTRACT

This project involves discovering how the major health care facilities and services can be arranged in a single digital platform and can be commercialized so that it can give a handful of benefits to the society. The project targets on some of the basic healthcare problems which people face in day to day life in various developing countries and a solution for it is yet not available. In a developing country like India where connectivity is a major problem and in case of medical emergencies people do face a lot of hindrance .Thus this is an attempt to give maximum support during such cases and thus we come up with "CALL FOR LIFE" ,an application with a vision of changing the entire healthcare ecosystem in India .

KeyWords

Ambulance, Bed Status, Doctor Availability, Laboratory, Patient History, Future of Medical Science, Once Stop availability of Medical Services.

1. Introduction

The vision of CALL FOR LIFE includes, Digital infrastructure as a utility to every citizen whereby people can get the maximum advantage of emerging digital technologies. Affordability & accessibility is the prime factor

as far as digital infrastructure is concerned. Other spheres include Governance and services on demand, immediate requirements can only be fulfilled when there is a concrete support system. In our project we have developed a round the clock assistance for every kind of medical issue that one may face and it assures to heal up the momentary crisis period.

Another vision of ours is Digital empowerment of citizen which allows every citizen to have a easy access to a wide range of services moreover people will able to get services at their door step with a single click. With the advancement of digital technology it is very necessary to enhance the medical services which are very important factors in day to day life. Thus CALL FOR LIFE aims to bring a major revolution in the field of healthcare by using advanced and centralized connectivity systems.

2. Need for Digitizing Healthcare Services in India –The Concept Of CALL FOR LIFE

2.1 Patient History Update is not maintained

Currently Healthcare services in India are disintegrated, not easily accessible and complex. According to most professionals Patient History Update is not maintained which causes a serious issue for patient as well as a doctor mostly with new cases. So it is highly recommended to create a platform which can store, maintain as well as update patient data and at the same times grows interests in patients to update their medical records or history.

2.2 Scattered & Decentralized Ambulance Service

A serious problem reported by many people around the globe is Scattered & Decentralized Ambulance Service which is a key issue now days. Reports and statistics says a lot of patient die only due to delay in Ambulance arrival .Lack of proper Ambulance Connectivity is like threat to mankind .During Emergency getting the Ambulance within the right time is of utmost importance .So a central ambulance connectivity platform is of much need where an user can easily connect to the nearby ambulances with just one click.

2.3 Lack of Centralized Bed Status Checking, Booking and Cancellation facilities

Another serious issue of concern noted by various patients and patient family is Lack of Centralized Bed Status Checking, Booking and Cancellation facilities. Countries like India has a very high population density due to which even emergency patients are kept waiting in the corridors of government hospitals where the environment is not at all suitable for any kind of patient. Even they don't have the idea about the bed status of other nearby hospitals, so they had to keep on waiting resulting to degradation of their health. Thus the concept of a one stop portal for maintaining the bed status of different hospitals is of immense importance.

2.4 Lack of communication with suitable Doctor

People face a lot of connectivity problems in the hour of need to get the appropriate contact of the required physicians nearby .Many undergo severe trauma when they observe their near ones are suffering and they feel hopeless as they are having Lack of communication with suitable Doctor at the earliest. So there is a need to develop an application which connects doctor with the patient immediately and giving a wide range of options to the patient.

2.5 Inconvenience to get the rates and reviews of various labs before tests

The increase of corruption within the healthcare system is making it tough for the patient to get the proper medical facilities in an affordable price. Doctors put emphasis for laboratory tests even for very small reasons and provides recommendations on the basis of commissions given by the respective labs even compromising the quality of diagnosis. People find it safe to perform their tests from the recommended labs by the doctor. We come up with an Easy way to get the rates and reviews of various labs before tests, thereby saving money and getting best quality diagnosis done.

3. CALL FOR LIFE - THE APPLICATION ,FOR DIGITIZING HEALTHCARE SERVICES IN INDIA



Fig. 1.The Prototype of the application CALL FOR LIFE, Developed at CROSSHACK-2016, R.G.KAR MEDICAL COLLEGE, KOLKATA, INDIA

CALL FOR LIFE serves to be an one stop platform or portal to change the entire eco system of medical services in INDIA and aims to go beyond its boundaries serving people round the globe facing similar problems .It also aims to provide medical assistance to people in the rural area who are devoid of various medical services .It's key emphasis include Patient Data and history maintenance ,Easy access to Ambulance , Centralized Bed Status Checking, Booking and Cancellation facilities, Effortless Patient to Doctor connectivity and getting all vital information regarding Labs including their pricing for each tests and also rating a particular lab . At present there is no as such web based or application based platform present focusing on all the areas of concern but all this areas needs to be highlighted so that medical services can be improved and can be delivered to each and every individual. The concept of digitizing the whole healthcare services is of utmost importance and putting one step ahead towards future.

3.1 Patient Record

Medical records are a combination of both self-reported patient information and a physician's notes on diagnoses, care, and treatments. These histories involve a variety of information about a patient's health history and personal habits, including:

- Significant illnesses and medical conditions, including documentation on lab findings, diagnoses, and treatment plans.
- Biographical data including any history of alcohol use, drug abuse, and smoking, in addition to physical exams, allergies, medications, and any adverse reactions.
- Preventive therapies such as immunizations and screenings.

Paperwork to document services performed by medical professionals including dates, times, attending medical personnel, admittance and discharge reports, prescriptions, and any other related medical and lab reports. Until recently, all of this data was paper-driven. This low-tech format made medical records more prone to error, omission, and loss.

Our technology brings medical records of patients under one roof. The basics of medical records remain the same and its purpose is unchanged, regardless of the platform in which you interact with a patient's healthcare history. Thus medical records have entered the digital age. Technological advances have given rise to more thorough databases that can be searched for patient information instantaneously while reducing the human error quotient. Recent improvements patient healthcare are the result of many factors: scientific breakthroughs, medical improvements, and hi-tech advances. Medical records fall into the last kind; they are a portal through which a physician and other medical staff can step into the account of a patient to learn about prior care, comprehend current diagnosis and status, and subsequently create a treatment plan. Medical records have long been vital tools in enduring care. As digital medical records databases continue to grow, healthcare will become more cost-effective and result in improved patient outcomes. Medical professionals using data-driven medical records will be on the cutting edge of providing patient care; using these tools, they will be able to catch human error, track therapies, monitor effectiveness of treatments, and make predictions about outcomes Shadow doctors delivering twins, throughout the entire course of a patient's lifetime. With respect to the profession of medicine and malpractice, using digital medical records in your office allows for increased oversight and lowered liability. While medicine will always be an art that relies on personalization and the human touch, technological advances will allow you to take your practice to the next level of safety and effectiveness [1]

CALL FOR LIFE

Thank you for choosing CALL FOR LIFE. We will try our best to serve you in terms of medical services.

Patient Information

First Name * Middle Initial Last Name *

Birth Date (MM/DD/YYYY) *

Address *

Phone *

Date and Time

Date *

Time *

Health History

Blood Group *
 A
 B
 AB
 O

Gender *

Height *

Medical History *

Allergies *

ANY HEREDITARY DISEASE *

Fig. 2. Basic Patient Details Forum

3.2 AMBULANCE CONNECT

Need for an ambulance includes, life-threatening conditions like Heart attacks & severe chest pain Strokes, Bleeding profusely, Head injuries, Trouble breathing, Serious burns, Broken bones protruding through the skin, Unresponsiveness or coma, Drug overdose, Heat stroke, Drowning.

The chances of the condition getting worsen and become life-threatening on the way to the hospital, while moving the victim may cause further injury. The victim requires the skills and equipment of paramedics or EMTs.

Calling an ambulance has many benefits over driving to the hospital on your own. Ambulances are staffed with Emergency Medical technician on top of it equipped with advanced medical ambulatory devices. Our project focuses to easy and immediate access of ambulance using an android API and GPS based system so that a user can connect to the nearby ambulance with a single touch. What all needed is a registration in the portal mentioning the name, address, phone number. During the period of crisis one needs to enter the location of the person in need (e.g., upstairs in the bedroom), and describe the nature of the problem.

It would try to connect with all nearby Hospitals, Clubs and Non Governmental Organizations. All ambulances are not included in GPS system, An Android app is created and have it installed in their driver's mobile phones provided.

There will be back-end software created in LAMP usually a web site that will then tracks the location of these ambulances based on Google Map API's. The drivers will give bills at the end of the travel and all the drivers have to submit their record at the end of the day. So all the amount is given in the slip and driver is supposed to hand it to their superiors. It will also be having an online system for transaction and you can recharge it on the go. We happen to take copies of all the documents for ID proof and Address proof of the cab drivers (on confirmation of their employment) so that they can be traced in case of any criminal activities

or if they abscond in order to keep the patients security intact. The skills of the emergency ambulance technician will also be validated by us and experienced and skilled doctors. [2]

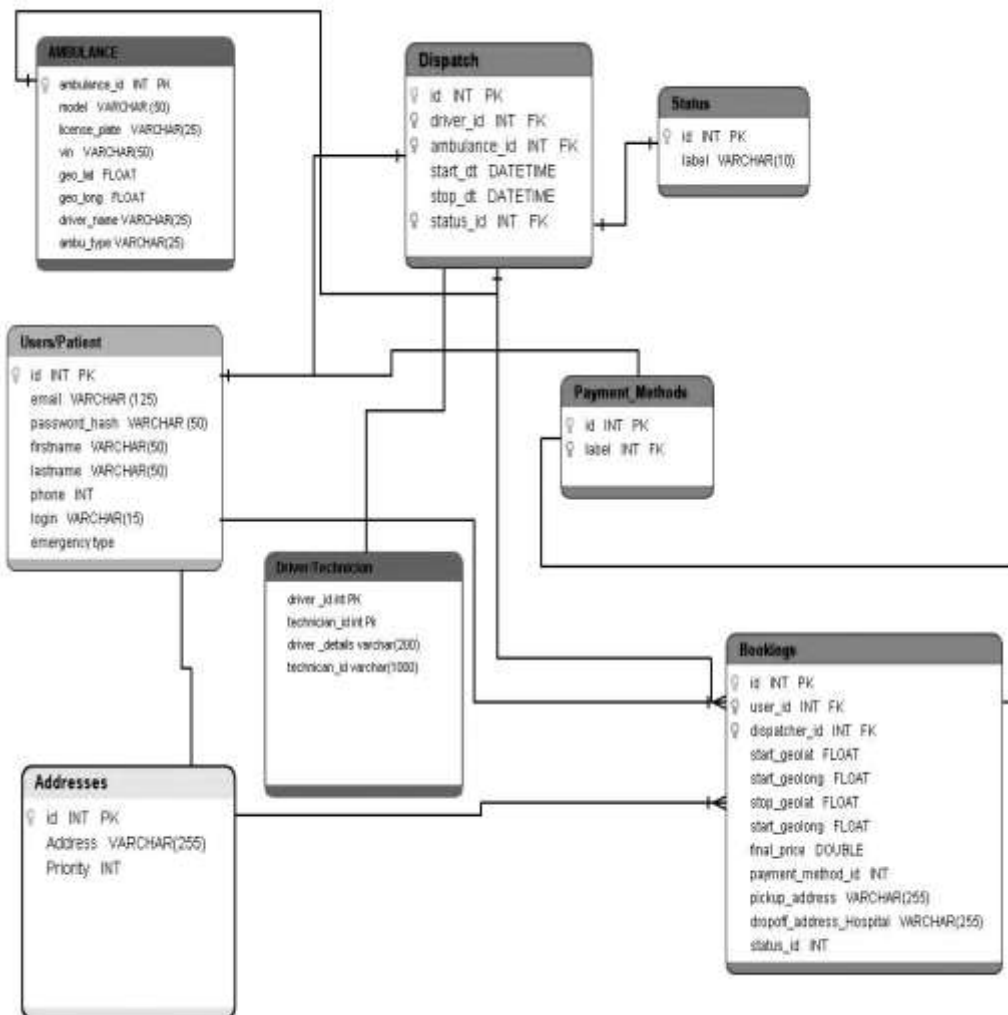


Fig. 3.The Ambulance connect system

3.3 GET MY BED

Bed management is the allocation and provision of beds, especially in a hospital where beds in specialist wards are a scarce resource. Because hospital beds are economically limited resources, there is naturally pressure to ensure high occupancy rates and therefore a minimal buffer of empty beds. However, because the volume of emergency admissions is unpredictable, hospitals with average occupancy levels above 85 per cent "can expect to have regular bed shortages and periodic bed crises." In Such Situations People do face a huge amount of problem as they are unaware of the bad status of different hospitals and nursing homes around them. Not only that, the family members of the patient also suffer a lot and at times the patient have to wait for a long time causing severe trauma and degradation of health condition. [3]

In such situations Call for Life provides the best solution, by just one click one can see the bed status of all the hospitals nearby and also book a bed if needed.

The Tab Present in Call for life for effective bed Management is titled as "GET MY BED".As soon as one clicks on the tab it will be redirected to the hospital server which will give them all the information about the bed status availability. There is an option of sorting on basis of service type of disease, rating and affordability within the tab. The Application will automatically take the

location of the device and will provide the user with all necessary details about bed, Operation Theater status. One will be having an option of booking the bed online and a secured payment gateway is also provided. Thus all information of bed will be available to the user with ease hence overcoming many problems faced by patients and their family members.

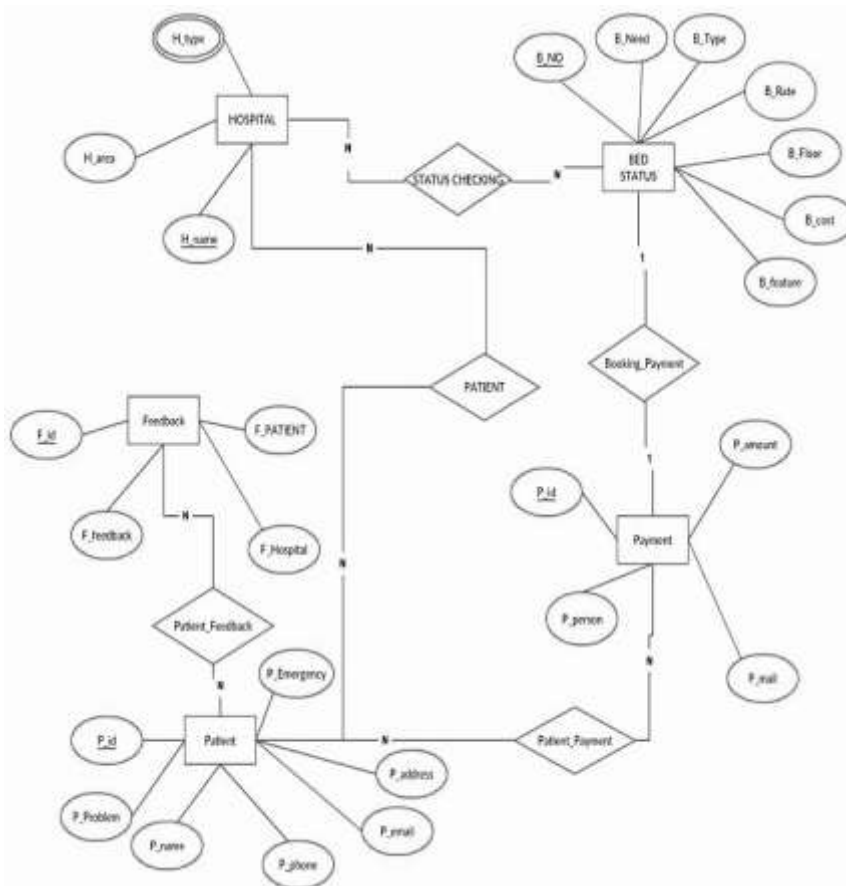


FIG. 4. THE BED STATUS AND BOOKING SYSTEM E-R DIAGRAM

3.4 GET YOUR LAB

“GET YOUR LAB” is a part of our application through which one can actually get price and information about all the tests that can be done in their closest laboratory. Doctors have tendencies to force patients to laboratory where they get a bigger margin of commissions. Get your lab seems to be an anti corruption weapon whereby one gets to know detailed price of tests in the side by side labs at the same time one gets information about the quality of tests he is doing for him or his near ones.

The working is very simple. We afford to go for door to door aggregation of data from labs about prices and the kinds tests and at the very instance rate the labs according to unrestricted feedback in another tab in our application “RATE YOUR LAB”. There are reviews and star ratings as per public choice. One will find it smooth enough to select the right place during the hour of need voted by others. But the pricing and other details about tests are set by surveys only.

Interested laboratory owners can even contact us with their fair and predetermined price charts. Surveys happen in a regular interval so as to keep up the pace of updating ourselves with any kind of up gradation or price hike of the laboratories One can book a test using our portal, to a specific laboratory. Technicians from the specific lab will come to their place for sample collection once the formalities are completed in a very secured online payment portal.

3.5 CALL FOR DOC

“CALL FOR DOC” is an innovative platform with which one can fix up an appointment immediately with a specialist doctor of required field from the call for life application. In our sever we maintain the database of the doctors along with their contacts. A similar application of the ambulances is provided even to the doctor’s mobile using Google API. Patient's location is first traced and all the doctors nearby who has the similar domains like general physicians, gynecologist etc will be alerted from the data-base as per the requirements field filled up by the patient during booking. As soon as one doctor accepts the request, notification for other doctors will be disconnected. The fees for the doctor need to be paid online through the secured payment portal. The time for the doctor to arrive will also be calculated approximately. There is an option for giving feedback for the particular doctor and the services.[4]

4. FUT URE ASPECTS

“Call For Life” is an applications which aims to bring changes in health-care services but there are some limitations of this in various aspects .This application can only be accessed from place which have internet connectivity so most of the rural places in all developing countries will face a major difficulty in using this application. Thus they will be deprived from all this facilities. Thus Call For Life is not only bounding themselves to serve people in the Urban area but also expanding their hand to the people in the rural area who are actually deprived of my facilities .Recent activities involve health camp , first-aid training , awareness camps in areas like Sundarban. So “Call For Life” is aiming to maintain a balance between the Urban areas and Rural Area.

Some futures plans involve Boat-Ambulance in remote areas of Sundarban and foundation of Co-Creation Lab

5. Conclusion

So the future of health-care industry is here. In this current pace of digitization, “CALL FOR LIFE” comes up with an ultimate solution of daily life medical problems. Our project involves applications to reach out the urban people as well as surveys and assistance to poor people in rural areas. Our project aims to change the entire ecosystem of medical facilities. It is just the beginning of a new era a lot more is waiting to come up time to time, with further advancements and quenchers of innovation.

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