

# Rural E-Health Management System

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## ABSTRACT

The applicability of an E- Health Solution that improves healthcare delivery settings in the rural parts of the developing world and discusses a proposed patient-centric E- Health Solution that suits the rural setting is the main objective of his project. The main benefit of implementing such an E-Health Solution is that it ensures the availability of the Specialist it's across a distance at many E-Clinics within the shortest possible time frame. Some of the important features supported by this solution are prediction of disease that might be required for diagnostic decision making by doctors, seamless work without much technical dependency (without maintenance); affordable, adequate and accessible solution for patient care management system.

**Keyword:** -Remote rural community, Wi-Fi Module and Blood pressure Sensor.

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## 1. INTRODUCTION

Patients in rural areas incur heavy expenditure in travelling long distances spending lot of time to consult Specialists in cities due to the lack of Specialists in their areas. This issue can be addressed by an e-Solution that makes appropriate use of Electronic Medical Records (EMR) and Telemedicine technologies which enables the patient to consult a Specialist through e-Consultation. Healthcare delivery setting in rural parts today exposes limited access to highly specialized consultancies. Patients in rural areas have to travel long distances to consult a Specialist in an urban area. This entails huge amount of cost, time and inconvenience especially in the elderly, post-operative and convalescing patients who have received specialized treatments. In rural area patient's medical records are stored in the record rooms of the hospitals where they are ordered and managed manually. When a patient visits the clinic, it is necessary to go through all the records to find the relevant record which imposes delay to the process. The patient records are piled up for searching a particular record when a clinic is about to start. This problem could be addressed by connecting the Patient and the Consultant through a web-based Electronic Medical Record (EMR) system. The use of electronic medical records would also help manage patient's medical records more efficiently. The applicability of an E-Solution that improves healthcare delivery settings in the rural parts of the developing world and discusses about a proposed patient-centric E-Solution that suits the rural setting. The main benefit of implementing such an E-Solution is that it ensures the availability of the Specialist across a distance at many E-Clinics within the shortest possible time frame.

### 1.1 PROJECT SCOPE

Gramine Arogya is an initiative that focuses on improving the health status of the targeted underprivileged population. gramine Arogya, aims to make quality healthcare affordable and accessible to rural regions of India through its primary health care. Health of citizen is the wealth of Nation. India has Contributes the most ancient medical science "AYURVEDA" to the world besides other medical sciences. Life is becoming too busy to get medical appointments in person and to maintain a proper health care. The main idea of this work is to provide ease and comfort to patients while taking appointment from doctors and it also resolves the problems that the patients have to face while making an appointment. This system is designed to improve the Quality of hospital in the area of clinical process analysis. gramine Arogya system is working to prevent non-communicable diseases, through health

education and lifestyle change. Help people around the world lead healthier lives. Our mission is reflected in our very name – Arogya in Sanskrit means to live a life without disease. India is particularly hard hit by diseases like diabetes, heart disease, cancer and chronic lung diseases, and this is a major area of focus for us. To raise awareness on basic healthcare and hygiene amongst the communities and develop positive health seeking behaviors amongst them.

## 1.2 AIM AND OBJECTIVE

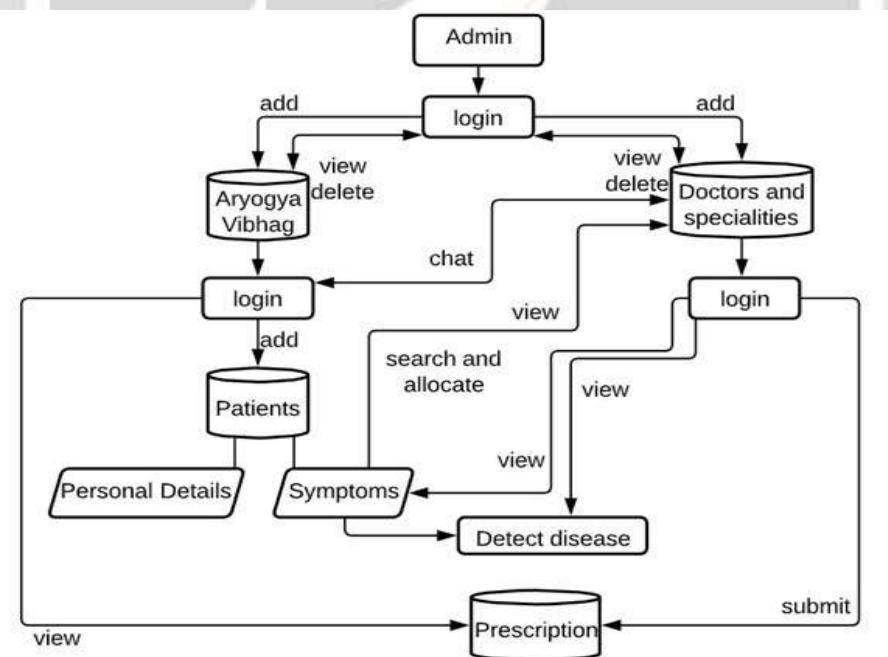
To improves healthcare delivery settings in the rural parts of the developing world and discusses a proposed patient-centric E- Health Solution that suits the rural setting .

The objectives are as follows:-

1. To provide a record system of reports of a person digitally form the start of very first treatment.
2. To approve permissions and passes through various available facilities on basis of health records to avoid spread of disease.

## 2. SYSTEM ARCHITECTURE

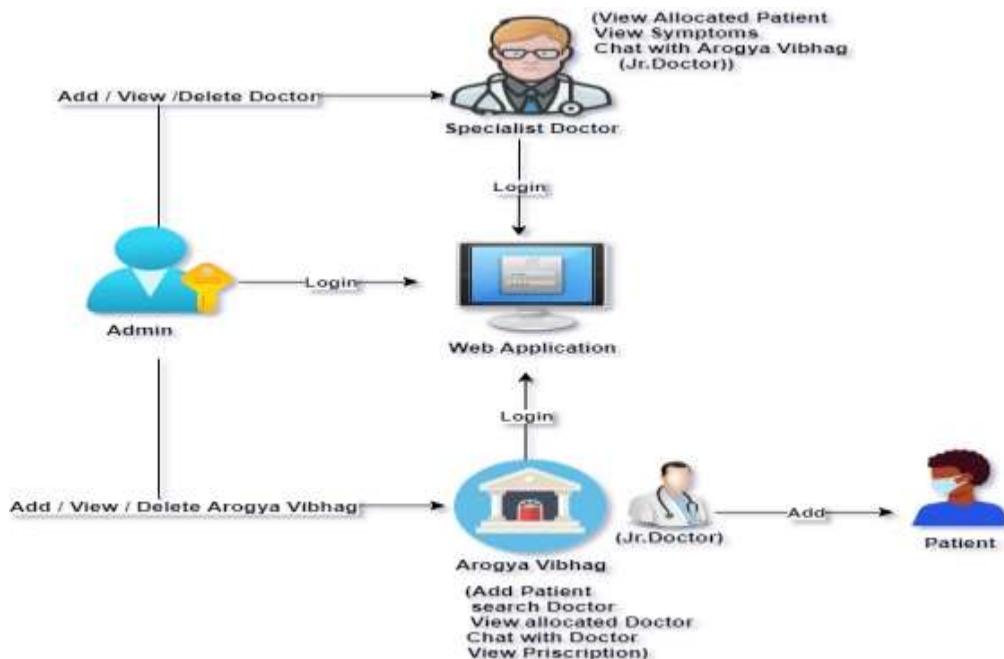
The rural e-health system is a web app which can be helpful for people in rural areas, as they do not have access to good medical facilities. In this age of digitalization, this means is put to use and can save lives. For detection of disease data mining technique is used. SVM algorithm is used. In the system, the admin can add doctors including specialties, view and delete doctors. He can add, view and delete Arogya vibhag. The Arogya Vibhag Jr. Doctor can add patient and their details like their symptoms. He can search for specialist doctor and detect disease, view allocated doctor and chat with him and view the prescription.



**Fig. 1:** System Architecture of Rural E-Health

The Senior Doctor will be in contact with the Arogya Vibhag Doctor. He can view the allocated patients, view their symptoms and system detected diseases. He can chat and submit the prescription to the Arogya

Vibhag Doctor. The patients of rural area will be heavily benefited by the rural e-health system in inaccessible areas or isolated regions. Patients can receive clinical healthcare from their home without arduous travel to the hospital.



**Fig -2:** System Architecture module

## 2.1 PROBLEM STATEMENT

Local pharmacies are selling medicine with or without prescription from the doctors. So the abuse of selling medicine that affects the general people suffering different diseases and young generations getting addicted which spread out over the country. Most of the doctors prescribe medicine on a handwritten prescription paper and giving suggestion to make the laboratory test to the patients to verify their diseases. Mostly, patients lose their previous prescription and the laboratory test report which will create problem to doctors to verify their previous diseases and to make decisions. At present in the cities, healthcare and diagnostic centers practice limited applications of electronic patient record mainly in the diagnostic services but having no share or access to their database in the local hospitals. Although the patients are paying a lot for their health services, they are getting less benefit from these health care systems, and they feel that they are victim by themselves. As a result, patients are mentally disappointed, isolating their important health record; suffering different problems and cannot store their health record safely.

## 2.2 APPLICATION:

- 1) The user interacts with the system.
- 2) Doctor View Symptoms & Detect Disease.
- 3) Give Prescription to Arogya vibhag.
- 4) Save Time.

### **3. MODULES:**

#### **3.1 Administrator:**

The admin can login and operate the whole system. The admin will login and can add, delete and view the Doctor and Arogya Vibhag.

#### **3.2 Arogya Vibhag (Jr. doctor):**

The user Arogya Vibhag (Jr. Doctor) can login to the system and add Patients details. Arogya Vibhag (Jr. doctor) can search for doctor based on symptoms. Arogya Vibhag (Jr. doctor) can view allocated Doctor. Chat with Senior Doctor.

#### **3.3 Doctor (Senior Doctor):**

The Senior Doctor can register and login. Senior Doctor can view allocated patients. Also view symptoms & Detected Disease. Chat with Arogya Vibhag (Jr. doctor). Submit Prescription for Arogya vibhag..

### **4. CONCLUSIONS**

A detail description of the E-Solution as a proof of technology which was developed to support the problems prevailing in the current healthcare settings in rural areas. It shows the significance of implementing an Electronic Medical System and about the system architecture, application design, technologies used and how the system model should be optimized to suit the conditions considering the critical issues, challenges and security constraints as well. It is concluded that this is a promising solution that facilitates health consultations in rural communities of developing Countries with less Cost, Travel Time and Travel Distance, making a healthy population that will in turn catalyse the global development process.

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