

## Foeticide Monitoring System

Akhilesh Kumar, Abhishek Srivastava, Vrushali Patil, Niketa Penumajji, Prof. R.V Patil  
(Dept. of Computer Engineering, PDEA's College Of Engineering., SavitribaiPhule Pune University, Pune)

Email:

[akhilesh143kumar@gmail.com](mailto:akhilesh143kumar@gmail.com)<sup>1</sup>, [abhisheksri.69@gmail.com](mailto:abhisheksri.69@gmail.com)<sup>2</sup>, [vpatil7411@gmail.com](mailto:vpatil7411@gmail.com)<sup>3</sup>, [niketa912@gmail.com](mailto:niketa912@gmail.com)<sup>4</sup>,  
[rvpatil@gmail.com](mailto:rvpatil@gmail.com)<sup>5</sup>

**Abstract-** We aim to provide effective healthcare to population in the country with newly developed system. The SYSTEM is to be an interface between the community and the public health system. Mobile technologies have penetrated rural parts of developing countries such as India unlike any other technology. This can be leveraged to provide primary maternity healthcare services. This new system enables present system to provide maternity healthcare services efficiently and transparently. New system can be used to register all the pregnancies in the country and subsequently track pregnant women throughout the period of pregnancy for vaccination and periodic checkups. Appointment for ultrasonography, alert to the linked number in emergency, tracking of patient, diet, prescriptions etc. may also be scheduled or viewed via the mobile application. New system can also be used to "prevent female foeticide" by monitoring the monthly records provided by linked hospitals. The system and method to provide effective healthcare services in India and methodology to prevent female foeticide are presented in this paper.

**Index Terms-** Patient management, Online records, Results, Sex Selection Abortion, Abortion monitoring, Maternal Child health, Mobile Application, Alerts

### 1. INTRODUCTION

Medical records are the important to the healthcare sector; however these records are not utilized to their potential. Often records are inaccurate, misplaced or duplicated unnecessarily. In a world which determines the improvement of data digitization and networking as a constructive force which often increases efficiency by lowering costs.

One of the most important issues in healthcare information systems is to enhance the medical data quality extracted from distributed environments, which can extremely improve diagnostic and treatment decision making.

One of the main goals of the electronic health record system is to empower patients to access to their own medical decisions. However, medical data is largely coming from clinical institutions so there is no way for them to control or maintain their own medical record. Patients or guardians may need to keep track of their medical data such as observed symptoms or measurements that may not be available in the health record. Additionally, clinical decision without patient medical history can be error-prone and even be detrimental. Personal medical condition history is considered as the one of the weakest links in the current healthcare systems. For those reasons, it is necessary to have an effective and efficient health record system that allows patients or guardians to constantly monitor and control the personal health record. We propose a cloud based personal health

record system that allows constant monitoring capability by supporting dynamic creation of clinical document architecture document. We provide constant monitoring capability by using easy uploading module and decision support system.

In our proposed system we are implemented a web page which mainly has Three logins namely admin (Central Authority), Doctor and Hospital. The patient when enters a hospital undergoes a registration process which contains the details of the patients which are stored in a database later which the doctor can access.

Now the patient is assigned to a particular doctor and is expected to visit the very same during every check-up. Here in this implementation once a patient has registered she will be sent a message notifying her registration has been successful and will be sent along with a link of an application to be downloaded.

Now every patient can login into the account and view her records any updates as monitored by the doctor. Whenever an updates is made by the doctor a pop up message with appear in the patient mobile and she will also be notified of her next appointment. So in this way the patient will also be provide with an option in case of emergency where she can simply press a button and an alert message will be sent to the hospital along with the location.

So, that an ambulance can be sent to the location. The central authority can have an access to every minute details of hospital and hence can generate overall

analysis graph of the number patients begin treated from each hospital.

As a Distributed Systems the system offers all the advantages of an Application Service Provider but overcomes security and proximity issues by allowing hospitals to keep the primary system at their facility. The so developed product will be working on 2 platforms: Web page (portal), Android Application (patient).

**1.1 AES ALGORITHM:** As this paper is working on the many private aspect of data that if that data is hacked or leaked from the proposed server then there will be a big loss to the patient so for that we are using AES Encryption for securing the password that are being stored on the Server/Database. AES algorithm is as follows:



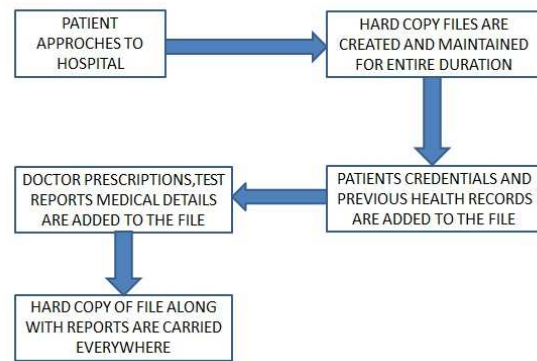
AES ALGORITHM OVERVIEW

AES algorithm is the most secure algorithm as it has block size of 128 bits, but three different key lengths: 128, 192 and 256 bits.

So as soon as the user (i.e. Doctor, Hospital or Patient) registers themselves their password will be stored in the database in the form of ciphertext that will be a bit difficult for the attackers to decrypt that credentials.

## 2. EXISTING SYSTEM

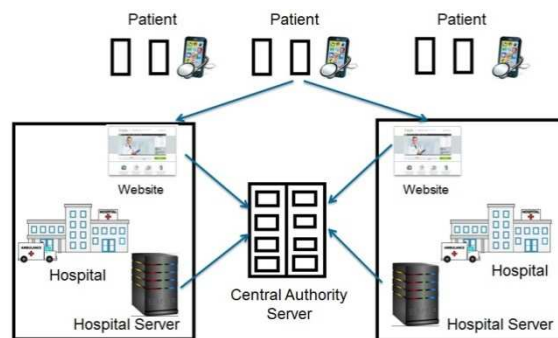
Now days there are many cases of girl child killing in foetus because there is no governing body or system who can have the track of all nine month of maturation of foetus. Lady patient visits to doctor does her registration that is all hard copy or data is stored are local to that clinic or hospital which can increase the threat to the security of data as well as anyone can tamper the data and no one will be there to question them. Patients are given prescription and reports on papers or they are asked to make some notebook for their all course of diagnosis. Some patients are not that much fit to visit doctor on regular basis for just collecting reports.



EXISTING SYSTEM

## 3. PROPOSED SYSTEM

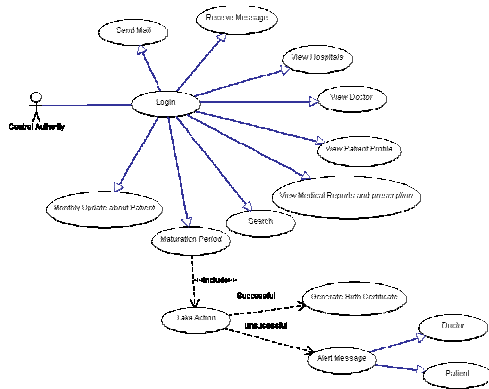
Following section contains the brief description about the architecture which we are going to implement in this paper.



PROPOSED ARCHITECTURE

### 3.1 CENTRAL AUTHORITY-ADMINISTRATOR

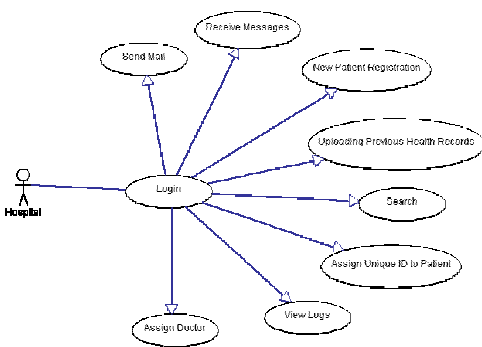
It is superior of all the system solely responsible for monitoring the data and records of the patient's enrolled primarily maternity cases provided by the linked hospitals. It is mandatory for the hospitals to link their database servers to the central authority. On maturation, it provides computer generated certificate to the patients. In cases like unsuccessful delivery, breach in regular data updating etc. It will inquire the report from the hospitals asking it to state the reason, cases etc. It can view all the details of hospitals, their patients and respective prescriptions along with reports.



FUNCTIONS OF CENTRAL AUTHORITY

**3.2 HOSPITAL**

When the patient approaches hospital she undergoes the process of registration in which all the information about the patient is stored in the hospital database which will be reflected to the assigned doctor. Patient is given a unique identity number which will be treated as the sole identity of the patient and also hospitals will ask her to register herself on an android application. This registration also includes mentioning of the patient's all previous medical records from minute to major if any exists. On completion of the registration process and installation of the application on the android application, the patients are being allocated a doctor and all information registered is shared with respective doctors. Patient is given a unique identity and asked her to register herself on an android application.

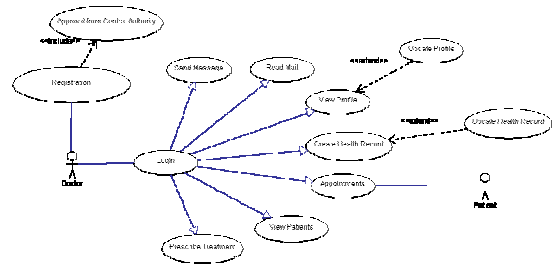


FUNCTIONS OF HOSPITAL

**3.3 DOCTOR**

Doctor gets prompt message of the assigned patients where he can access the patients' record uploaded by the hospitals management. On diagnosing the patient, all the prescriptions, medicines, advices, next

appointment are being uploaded on the site so that it is available for access anytime by the competent authority. Hectic task of the doctors to remember all the cases and analysing the reports every time on appointment is eliminated by the new system. The system is aimed to enhance the mechanism of the digitisation. Doctors give the next appointment which is highlighted in the application in manner of pop up message.



FUNCTIONS OF DOCTOR

**3.4 PATIENT**

Patient will be given a mobile application on which she can receive notifications regarding next appointments, reports, monthly diet, Dos and don'ts, Medicine details, etc. There is one enhanced feature provided to patient that, in case of emergency she can contact her relative and ambulance by simply pressing one alert button provided in application. The alert message will contain the exact location of patient via GPS and will be send to both relative and concerned hospital so that the hospital can timely manage the resources and send the ambulance to the traced location. This will help the system to provide better services more efficiently and effectively.



ANDROID APPLICATION FOR PATIENT

**4. TECHNOLOGY**

We have included the modern, easy to use and easy to understand Technology which emphasises on the

upliftment of the services using lowest minimum understanding and labour. We are use a Cloud based technology to store the databases and directly accessed by the user. We are using IDE Eclipse for the development of the project. JAVA language is being preferred as it is platform independent and highly service oriented. JSP(java server pages) have been used to design the web pages for the admin, patient and hospital login.

At the database end, we are using MySQL and software used is **SQL Yog**. The software used mainly for the simulation purpose as it is a pilot project which if implemented at bigger level, has all the option to be get elaborated and heightened in range. We are considering to build a mobile application to deliver the patient, all the services in one hand and one click which will also boost the dynamicity of the project. Application will allow the patient to access the services in easy methods.

Apache Tomcat Server is also used for managing several Java EE specifications including Java Servlet, Java Server Pages (JSP), Java EL, and Web Socket, and provides a "pure Java" HTTP web server environment for Java code to run in.

The project have all the capability of good software project like flexibility, scalability etc.

## 5. IMPLEMENTATION

The project is being implemented for the simulation purpose to get better understanding of the working of the project once a project is run on eclipse the all modules got the redirection and starts complementing each other. Patients have to register themselves in the register.jsp redirects the patients to the login page. Patient after filling all the desired and mandatory fields got the access and prompt message of the successful creation of the account. Similarly the hospital has the services in the modules like hospital.jsp which assigns the doctor to the patient. Doctor assigns the prescription, next appointment whereas Central authority monitors the all.

This study is aimed to build a system that will improve the monitoring of pregnant women and foetus. Using this system we can bridge the gap between female patient and doctor. Emergency alert will enhance the application which can be used in disaster situation. In the supervision of Central Authority we can simply fight against the problem of sex selection abortion and can reduce killing of foetus. Ongoing research will include further experimentation to assess, explore and develop the system to full potential.

## 6. CONCLUSION

This study is aimed to build a system that will improve the monitoring of pregnant women and foetus. Using this system we can bridge the gap between female

patient and doctor. Emergency alert will enhance the application which can be used in disaster situation. In the supervision of Central Authority we can simply fight against the problem of sex selection abortion and can reduce killing of foetus. Ongoing research will include further experimentation to assess, explore and develop the system to full potential.

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