

# E-PULSE POLIO VACCINATION REMINDER APPLICATION

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**Abstract** - Healthcare technology is an excellent extension to change something in the world and broad in the field of healthcare systems. Most of the developed countries accepted advanced technology in their vaccination systems. India is also one of such countries where vaccination system is prone to these and many other issues and hence it does not help in disease eradication. For example, polio remains alive in India because India's Polio vaccination system is faced with many problems and the biggest one is security of vaccination teams. Mismanagement in vaccination teams, ignorance in the public and fatalities are the main problems of the current polio vaccination system. To overcome these flaws and to make an idealized system with the new advanced technology, we propose technology oriented secure polio vaccination system. Our application provides the login to Various NGO's and for Clients. Client gets reminder from the app as well as they also get text messages (SMS) from the polio vaccination's team members. The e-Pulse Polio vaccination reminder app also provides all kinds of information related to all dosages of different polio vaccines from which parents get accurate information and guidance about polio vaccination.

**Key Words:** SMS, Vaccination, children, health, Remainder.

## 1. INTRODUCTION

Health-care services have developed because of technological advancements. Technology in health care encourages the people to accept healthy lifestyle along with the improvement of technology-based involutions made to improve the working of healthcare. Many diseases like cough, etc can be detected using technology. Technology works from detecting malware to protecting computers from attacks. The rapid growth and adoption of mobile technology has pushed up demand for mobile-based data collection solutions to fill knowledge gaps in the health care sector. Parents and guardians are worried for their children's safety and health. As a result, they take great measures to keep their children healthy; it is every parent's dream for their children to be free of illness. Vaccination is a great way to prevent children from getting sick.

## 2. LITERATURE SURVEY

In paper [1] Many ICT interventions have been introduced to address health challenges including those of

rural communities. Rohit and Borriello (2010) designed a mobile phone-based system (Fenestra) for remote monitoring of the temperature and location of vaccines.

In paper [2] In Africa, the GPEI currently funds 90% of the over 1000 personnel associated with WHO regional offices for Africa's Immunization and Vaccine Development (IVD) effort. Just 47% of IVD staff time is spent on polio alone, even though 53% of their time is already spent focused on multiple diseases.

In Paper [3] In 2012, the World Health Assembly requested a comprehensive polio endgame strategy, which culminated in the development of the Polio Eradication and Endgame Strategic Plan 2013-2018.

## 3. PROBLEM

Polio is one of the infection diseases caused by poliovirus and still spreads in India. Every year, over 2 million children under the age of five die in India, and another 1 million or more are permanently disabled. Parents sometimes fail to vaccinate their children on time, which is one of the main causes. Existing polio vaccination system of India is incompetent and ineffective. Mismanagement and insecurity are major problems of the existing system. These deficiencies push the vaccine program to a halt and raise the number of children who are not vaccinated. As a result, there is a need for a framework that can deal with existing problems while still being able to adapt to changing times and technology. The vaccination eradication program must be strengthened. The Polio awareness program also needs to be improved.

### 3.1. SOLUTION- NEED OF PROJECT

The vaccination reminder and recall system is an effective way to identify children who need to be vaccinated and to contact health centers to get vaccinated. Reminder systems can work through a variety of mechanisms meant to prompt the patient, including media campaigns, telephone, posters, e-mail, and short message service (SMS). While all types of reminder systems are effective, telephone reminders have been found to be the most ideal, but also the most expensive compared to other mediums.

The recent increase in cell phone use is a phenomenon that affects people of all ages and genders. Hence, using a reminder system through mobile phone messaging service

may benefit the community especially those parents who are between 20 and 60 years old. In this Application, we propose a very effective technology-based polio vaccination system for India after identifying the drawbacks in the current system. The key goal is to improve the polio vaccination system in terms of efficiency and stability.

#### 4. PROPOSED SYSTEM

A web portal and an Android application are part of the E-pulse polio vaccine reminder project. The Android app will be used by parents of children and the Web portal will be used to update information by workers working in the polio campaign. This project is based on the database and Android based techniques. To keep the records in database it uses MySQL software which is one of the best and the easiest database to keep information. The user's details are stored in a database like their name, date of birth and gender. The details are finally connected to the server. This enables the admin of the application to control and keep track of the number of campaigns and users. This project includes Global Positioning System to track the location of patient, to classify users based on their address and hospital address in case of emergency. Determine what information should be included in a text message alert, gather specifications for a text message feature, and prepare for SMS implementation. A group discussion was conducted to determine the effectiveness of strategies and methods for sending immunization reminders, as well as appropriate message content, message frequency, and message preferences for missed and upcoming vaccinations.

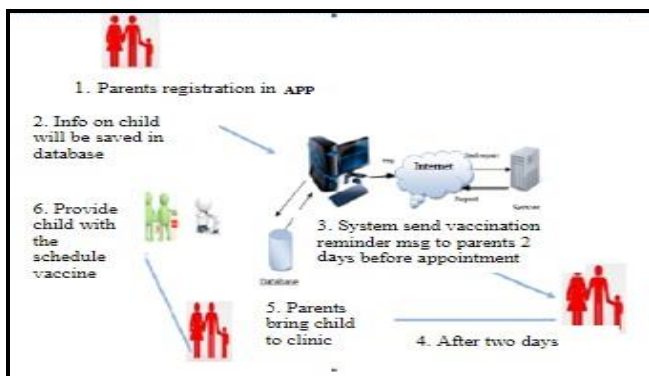


Figure 1: - Methodology used to send the SMS alert

Above figure demonstrates how the SMS-based vaccine reminder method for children works. First, parents who decided to use the system will register in the mobile application. The parents' and child's details will be stored during the registration process. This includes data on Parents mobile number and date of birth of the registered child. An alert will be sent to the registered mobile phone via SMS and mobile application two (2) days prior to the scheduled vaccine. The SMS and the alert reminder received would contain information on the child's name, type of

vaccine to be taken and the date of the scheduled Vaccination Campaign.

#### 4.1. WORKING

- Working of Web-Portal

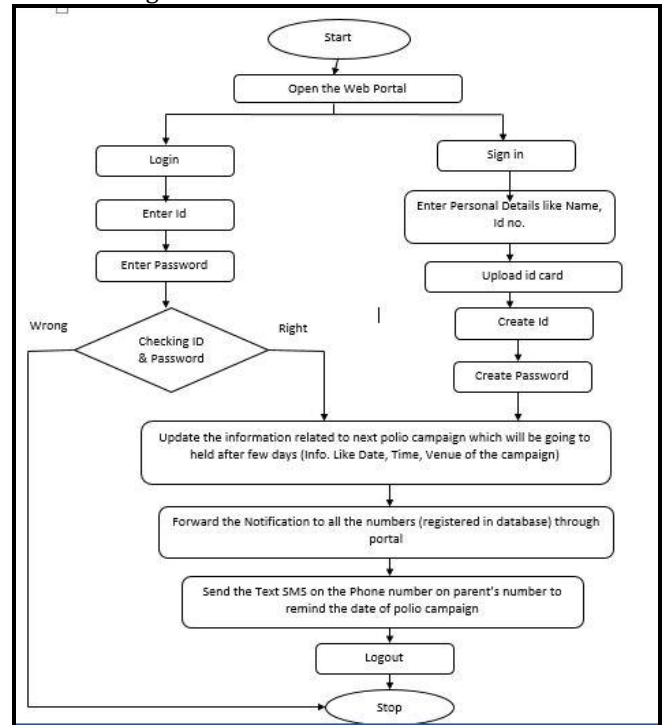


Figure 2: - Flowchart for working of Web Portal

- First open the Application in your mobile phone or Computer.
- Then if you are an existing user then login with your appropriate ID and password.
- And if you are a new user then Sign in with entering your all details like Name, contact number, Your Address, etc and Upload your id card which proves that you are the authorized person who is working in polio campaign.
- Update all the information like date, time and venue of the next polio campaign which will be going to held after few days.
- Then forward the notification as a reminder to all the users through portal to the android app.
- Also send the text SMS on parent's mobile number.
- Then Logout from web portal.

• Working of Android Application

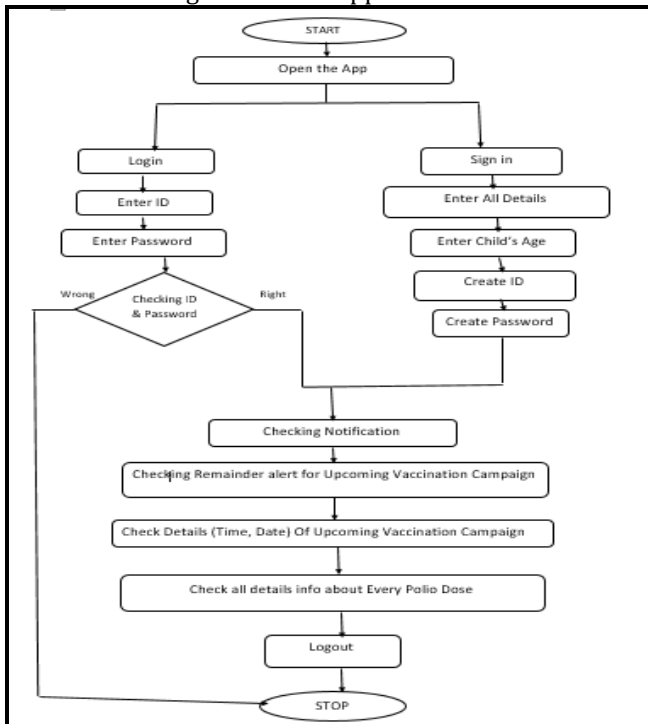


Figure 3: - Flowchart for working of Android Application

- First open the Application in your android mobile phone.
- Then if you are an existing user then login with your appropriate ID and password.
- And if you are a new user then Sign in with entering your all details like Name, contact number, Your Address, etc and Enter your Child's age.
- Then your account in app will open then Check the Notifications.
- Also check the reminder alert of upcoming vaccination.
- Then check all the details of upcoming vaccination campaign like Date and Time, etc.
- And you can check the detailed information about every vaccination dose which will be given to your child.
- Then logout from the Application.

5. FUTURE SCOPE

Some planned features were shelved for future development:

- Accessibility, reusability, and durability all add to the content's value.
- We will develop the skills required to get the website up and running on the application and accessible to customers.
- It will also keep track of the user's vaccination history.

- There are no options for mandatory or optional vaccines in our app. To make the app more practical, this feature can be added.
- Higher levels of security can be implemented.

6. CONCLUSIONS

The use of mobile phones increased as the number of users has dramatically risen, where mobile phones have become part of peoples' lives. The goal of this project is to help parents to receive notification and SMS messages that provide time specific information about their children vaccination appointment for their children. E-Pulse polio vaccination reminder app may help parents in ensuring that children vaccination is taken as scheduled. This will allow children to be immunized against diseases and the spread of disease to be prevented.

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