

Vaccine Alert

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Abstract - The Vaccine Alert system is a mobile-based health reminder application created to assist parents and healthcare workers in ensuring that children receive their vaccinations on time. The primary goal of the application is to increase awareness about immunization and reduce the chances of children missing important vaccine doses. In many situations, children miss vaccinations because parents are unaware of the schedule or are busy with daily activities. Missing even a single vaccine dose can increase the risk of serious diseases such as polio, measles, and hepatitis. The application allows parents to register their child's basic details, including name and date of birth. Based on this information, the system automatically generates a vaccination schedule according to the National Immunization programme. The application then sends reminder notifications to parents before the vaccination date arrives. Along with polio vaccination, the system also provides reminders for other important vaccines such as MR (Measles-Rubella), DPT Booster-1, and Hepatitis B. By sending regular reminders and improving awareness about vaccination schedules, the Vaccine Alert App helps ensure that children receive all essential vaccines on time and supports the development of a healthier and disease-free future generation.

Key words: Vaccine Alert App, Vaccination Reminder, Child Immunization, Mobile Health Application, Polio Vaccination, National Immunization Programme.

1. INTRODUCTION

Vaccination plays a very important role in protecting children from serious diseases and improving public health. However, many children miss their vaccination doses due to lack of awareness, busy schedules of parents, or forgetting vaccination dates. Missing even one vaccine dose can increase the risk of diseases such as polio, measles, and hepatitis. To solve this problem, a mobile-based application called Vaccine Alert has been developed. The Vaccine Alert App helps parents and healthcare workers ensure that children receive their

Vaccines on time by providing reminders and notifications before vaccination date. The application mainly focuses on Polio vaccination but also includes other important vaccines such as MR (Measles-Rubella), DPT Booster-1, and Hepatitis B. Parents can register their child's details in the application, and based on the date of birth, the system automatically generates a vaccination schedule according to the National Immunization Programme (NIP). By providing timely reminders and maintaining digital vaccination records, the Vaccine Alert App helps increase awareness about immunization and supports the goal of building a healthier and disease-free future generation.

2. BODY OF PAPER

2.1 Objectives

The main objective of the Vaccine Alert App is to ensure that children receive their vaccines on time by sending reminders and notifications to parents and healthcare workers. The application also helps in maintaining digital vaccination records and improving awareness about the importance of immunization.

Specific objectives of the system are as follows:

- To send timely reminders and notifications for upcoming vaccination dates.
- To include multiple vaccines such as Polio, MR (Measles-Rubella), DPT Booster-1, and Hepatitis B in the reminder system.
- To allow parents to register their child and maintain a digital vaccination record.
- To create awareness about the importance of completing all vaccination doses.
- To assist healthcare workers in tracking vaccination progress and coverage.
- To support government immunization programs by reducing missed or delayed vaccinations.

2.2 Scope

The scope of the Vaccine Alert App is to provide a simple and effective system that helps parents and healthcare workers manage child vaccination schedules. The application sends automatic reminders before vaccination dates and maintains digital records of vaccines taken by the child.

The system allows parents to register their child's details such as name, date of birth, and vaccination history. It covers important vaccines including Polio, MR (Measles-Rubella), DPT Booster-1, and Hepatitis B. The application can be used in hospitals, health centers, and by community health workers to monitor immunization status.

In the future, the system can be expanded by adding more vaccines, multi-language support, and integration with government health databases for better monitoring and wider usage.

Sequence Diagram:

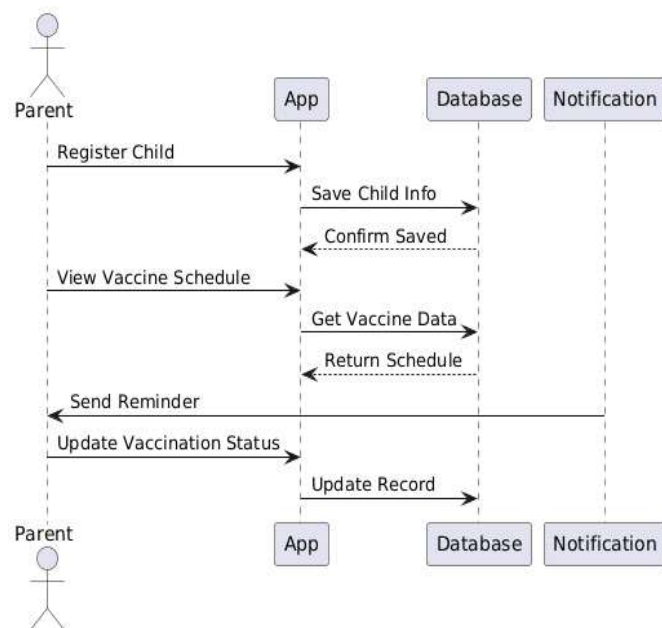


Fig1. Sequence Diagram

This diagram explains how the Vaccine Reminder App works and how the Parent, App, Database, and Notification system interact with each other. First, the parent registers their child in the app by selecting the Register Child option and entering the child's details. After the information is submitted, the app sends the child's data to the Database to save the child information. Once the data is successfully stored, the database sends a confirmation message back to the app indicating that the information has been saved.

Next, if the parent wants to check the vaccination plan, they use the View Vaccine Schedule option in the app. The app then requests vaccine-related data from the database by sending a Get Vaccine Data request. The database processes the request and sends back the vaccination schedule, which the app displays to the parent.

The system also includes a Notification feature. When the date for a vaccine is near, the notification system sends a reminder to the parent so that they do not forget the vaccination appointment. After the child receives the vaccine, the parent can update the vaccination status in the app using the Update Vaccination Status option. The app then sends this updated information to the database to update the record, ensuring that the child's vaccination data remains accurate and up to date.

Data Flow Diagram:

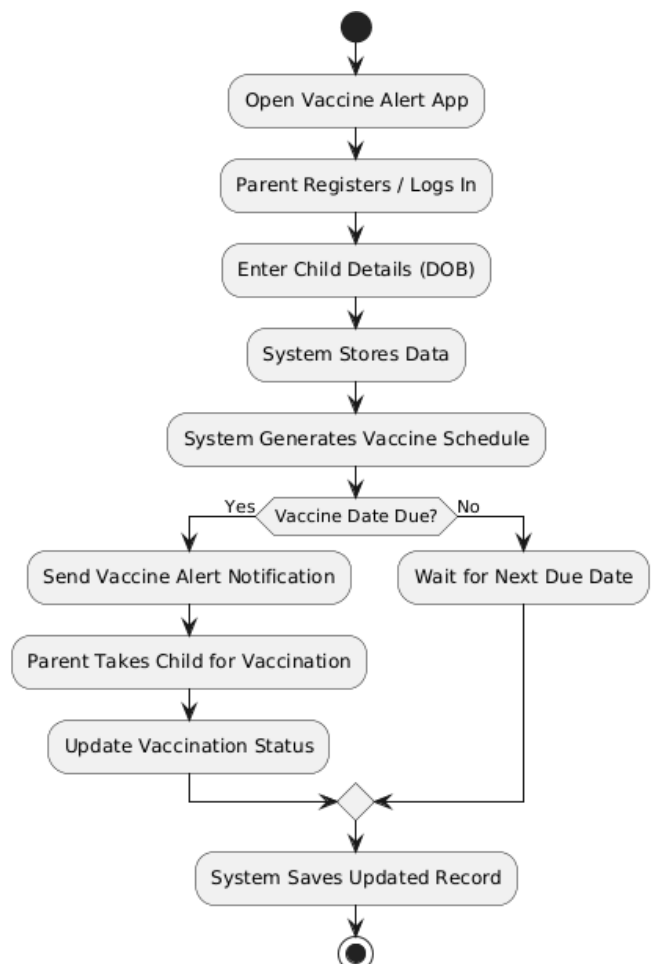


Fig2. Data Flow Diagram

This flow diagram explains how the Vaccine Alert App works in a simple process. First, the user opens the Vaccine Alert application on the mobile phone. After opening the app, the parent registers or logs into the system. Then the parent enters the child's details such as the date of birth (DOB). The system stores this

information in the database and automatically generates a vaccination schedule based on the child's age and recommended vaccines. After generating the schedule, the system checks whether the vaccination date is due. If the vaccine date is due, the application sends a vaccine alert notification to the parent. The parent then takes the child to the health center or hospital for vaccination. After the vaccination is completed, the vaccination status is updated in the application. If the vaccine date is not due, the system waits until the next scheduled vaccination date. Finally, the system saves the updated vaccination record in the database, ensuring that all vaccination information is properly maintained for future reference.

3. CONCLUSIONS

The Vaccine Alert System is a useful and practical mobile application designed to help parents, healthcare workers, and authorities ensure that children receive their vaccinations on time. The application sends reminders for important vaccines such as Polio, Measles-Rubella (MR), DPT Booster, and Hepatitis B, which helps reduce the chances of missing any vaccinations dose. It also helps increase awareness about immunization and supports government vaccination programs by maintaining digital vaccination records. The system improves communication between parents and healthcare workers and makes it easier to track vaccination schedules. Overall, the Vaccine Alert App helps improve child healthcare by automating the vaccination reminder process and ensuring that every child receives the right vaccine at the right time, contributing to a healthier and disease-free future.

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