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**DEVELOPMENT OF A PROTOTYPE OF PERSONALISED  
ELECTRONIC DIABETES DIARY FOR A TWO-WAY  
COMMUNICATION BETWEEN PATIENTS AND HEALTH CARE  
PROFESSIONALS**

ASHIKA K SHETTY

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**MANIPAL**  
ACADEMY *of* HIGHER EDUCATION  
*(Institution of Eminence Deemed to be University)*

A dissertation submitted in partial fulfilment of the award of

**MSc. Health Information Management**

Degree to

**MANIPAL ACADEMY OF HIGHER EDUCATION**

By

**ASHIKA K SHETTY**

**Under the Guidance of**

**Ms Geena Mary Skaria**

Department of Health Information Management

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## ABSTRACT

### **Background:**

This study is to design an android platform-based electronic prototype of personnel health record that supports self-documentation of glucose values. The application is mainly proposed due to lack of usage of personalized self-monitoring system for the diabetic patients using glucometer. Reviews suggests that lack of knowledge on the complications of diabetes and inadequate communication between the physicians and patient are observed key factors towards poor diabetes management. This application provides an easy-to-use personalized glucose value monitoring system for patients who use glucometer. It provides patient and physician accurate data on the patient's diabetic history in a timely fashion. The application is also an aid in entering and monitoring vital signs, general instructions in diabetes management, critical value alerts and alarms for glucose checking as well as taking insulin doses. The self-monitored glucose values will help the patient to keep a close watch on their glucose values and aid the physician to plan a treatment schedule, and to motivate the patient to self-monitor and manage diet, exercise, and insulin administration.

### **Objectives:**

To design an android platform-based electronic prototype for personnel health record keeping supporting effective blood glucose management and standardized service for patient with diabetes.

### **Methodology:**

The study consists of three phases. In Phase 1, a requirement analysis for the prototype development is conducted by taking feedback from ~~diabetologist~~/endocrinologist/ Physicians. In Phase 2 a prototype is designed and developed based on the feedbacks from phase 1. It is developed using Adobe XD which is a tool for designing the application. In Phase 3 the app is tested using data extracted from patient medical records. It is uploaded into the application and test its functioning and process flow. Its functioning is evaluated by enable the physicians. They are evaluated for efficiency and effectiveness of the system.

**Results:** The prototype was developed using adobe XD. The result showed that 80% of the experts/users were satisfied with the application.

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**Conclusion:**

The prototype was developed as a monitoring and tracking device of self-monitored glucose values by diabetic patients. After analysing the requirement from the experts, the prototype was developed. The prototype consists of features like blood glucose tracker, blood pressure tracker, heart rate tracker, symptoms tracking, step tracker, graphical representation of blood glucose levels, report sharing with health professionals. The developed prototype was reviewed by the experts, and it suggested that 80% of them were satisfied with the results.

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