Strathmore University
School of Computing and Engineering Sciences

## TITLE:

**A Centralized Platform for Drug Interaction Checks and Personal Medical Records**

## UNIVERSITY NAME:

Strathmore University

## DEGREE COURSE:

Bachelor's in informatics and computer science

## UNIT NAME AND ASSIGNMENT:

HCI Semester Project – Milestone 4

## LECTURER'S NAME:

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# Usability Evaluation Plan

## Objectives

Our goal is to assess how easily and effectively our users, i.e., patients and medical professionals, can navigate, access, and manage medical records in the app. We can use key questions to identify this, including:

i. Can users find and access medical records easily?
ii. Are there any areas where users get confused or even make errors?

## Identify Target Users

We can choose tech-savvy and less tech-savvy people to represent patients, doctors, and nurses to represent medical professionals, and even hospital IT administrators. We aim for 5 users per group.

## Evaluation Methods

i. Use Testing whereby users will use the app while we observe and note the difficulties.
ii. Questionnaires - after the test, we can ask users to answer a set of questions.
iii. Interviews to get feedback on the user experience.
iv. Heuristic evaluation - reviewing our interface against usability principles.

## Evaluation Materials

i. Preparing scenarios and tasks like login, viewing records, uploading, and checking medical history.
ii. Consent forms are used to ensure ethical data collection.
iii. Observation notes to track how the user experiences the application.
iv. Recording setup for the screen to see how the user navigates the application.

## Run the Usability Sessions

i. Environment can be in-person or remote.
ii. The facilitator guides the sessions.
iii. Observers take notes.

## Collect Feedback

Notes from observations, responses from questionnaires, and interviews are collected after each session.

### Analyse the data

i. Which tasks had the highest failure rate?
ii. What feedback was common among most users?
iii. What was the major user experience pain point for the users?

### Report Findings

Summarize the top usability issues, get the suggested improvements and prioritise the issues by severity.

## Usability Findings

### Ease of navigation and access

i. Clear navigation menus across all user dashboards
ii. Intuitive labels like upload records

**Issues:** Some screens have multiple sections, which may overwhelm less tech-savvy users

### User Errors

i. Success/error messages help guide users and reduce confusion
ii. Upload status message to provide clear feedback.
iii. Issues: The access code system, while secure, may be confusing for first-time users, hence the need for a tutorial.

### Task Performance

Tasks like upload of records, viewing history and checking drug interactions are clearly defined and supported by the user interface elements. Doctors and pharmacists can quickly retrieve patient data using access codes

### User Feedback

### Patient

i. “The dashboard is clean and easy to navigate, but I wish there was a short tutorial when I first logged in to explain what each section does.”
ii. “Entering the access code to view patient records is a great security feature, but it took me a while to understand how to request and use it.”

### Doctor

“I like that I can upload my medical records, but I wasn’t sure what file formats are supported until I saw an error message.”

## Accessibility

### Strengths:

i. Visual contrast, readable fonts, and large buttons support users with visual and motor impairments.
ii. Text-based alerts support users with hearing impairments.
iii. The use of plain language helps users with cognitive disabilities.

**Gaps:** No mention of screen reader compatibility or keyboard-only navigation and no multilingual support noted, which could be important in diverse healthcare settings.

### Suggested Improvements

i. Add onboarding tooltips or short tutorial for first time users
ii. Include error recovery suggestions in feedback messages
iii. Simplify complex pages by breaking them into steps
iv. Adding accessibility features like screen reader support.

## Improved Pages Based on Feedback

### Patient dashboard

Added a Need Help section to the Patient dashboard to help in onboarding new users though tutorials.

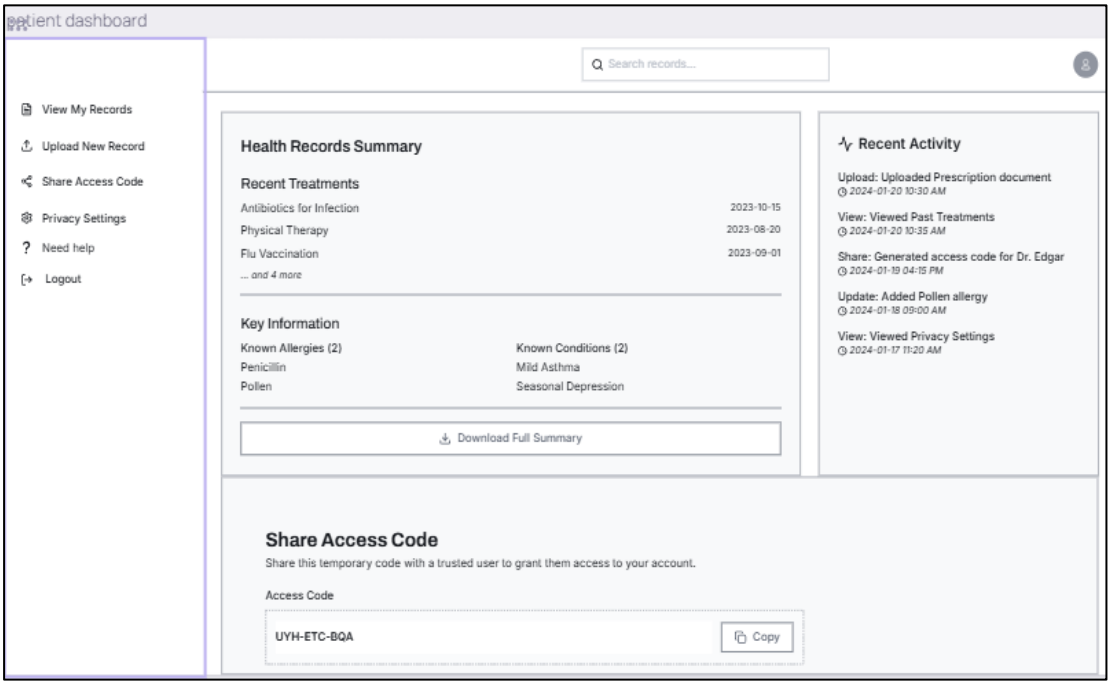


*Figure 1:Updated User Dashboard*

## Tutorial Onboarding

A new page has been added that features tutorial videos for new users.

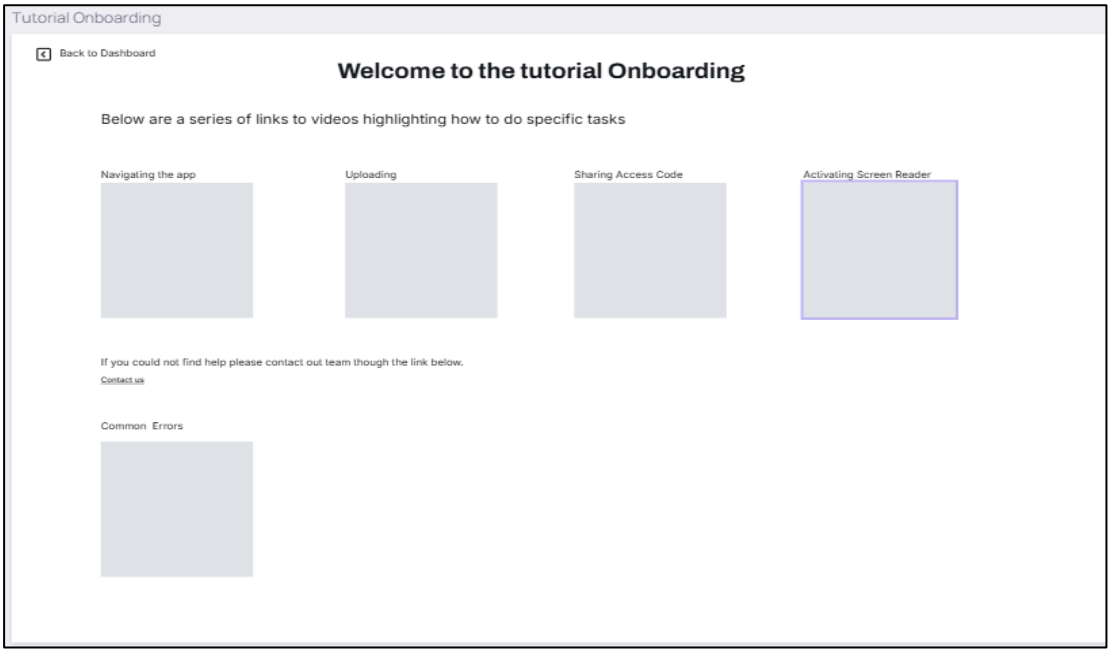


*Figure 2:Tutorial Onboarding Page*

## Check Drugs

Added icons to represent the severity of the drug reactions when they interact.

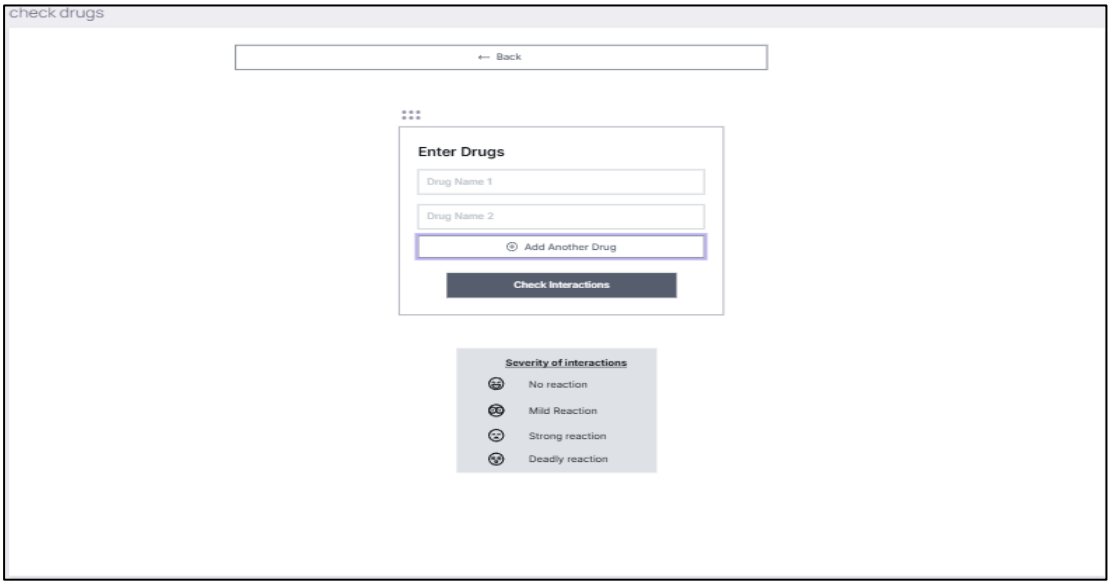


*Figure 3:Updated Check Drug Interaction page*

## Interaction Results

Results incorporating the icons make it easier for patients to determine briefly.

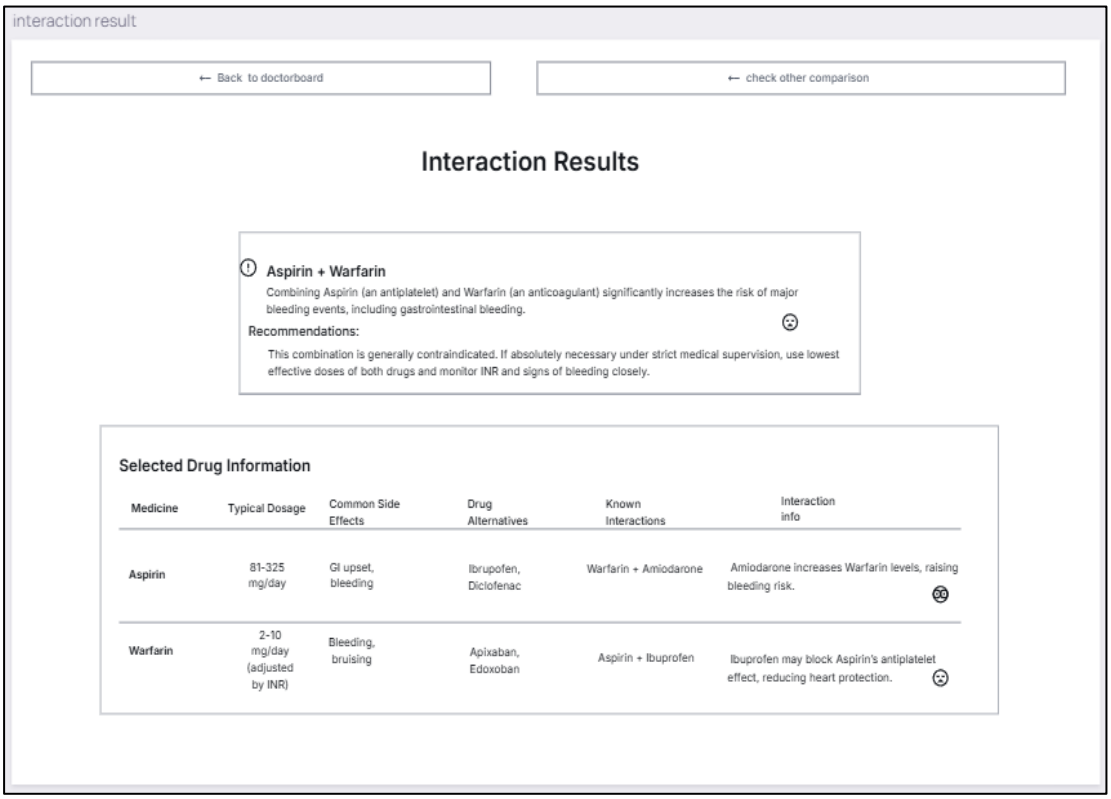


*Figure 4:Updated Interaction results page*