

# Product Requirements Document (PRD)

## Project Title: Unified Hospital Records Prototype

### 1. Context & Problem

Today, hospital data systems are fragmented and difficult to use. Nurses struggle to quickly find a patient's visit history across multiple systems, patients cannot easily access or share their own medical data, and hospitals face compatibility issues when exchanging records with other facilities. This creates inefficiency, delays in care, and frustration for both staff and patients.

Our prototype, Unified Hospital Records Prototype, aims to centralize hospital visit history, patient records, and imaging into one easy-to-navigate database that can be used by both hospital staff and patients. The system should make it simple to search, filter, view, and share medical data securely while maintaining interoperability with the external hospital systems.

### 2. Goals & Non-Goals

#### Goals

- Enable nurses to quickly access patient visit history and records within seconds.
- Allow patients to log in, view, and share their medical data with other hospitals.
- Support hospital stakeholders with integration capabilities for interoperability.
- Ensure that navigation is intuitive, requiring minimal training.
- Provide export options for both staff and patients in multiple formats (PDF, FHIR).
- Design with security, scalability, and HIPAA compliance in mind.

#### Non-Goals

- The MVP will not include billing, insurance, or payment features.

- It will not replace full EHR systems but instead serve as a lightweight records access layer.

## 3. Users & Flows

### Primary Users

1. **Nurses and Clinical Staff** – Need fast, accurate access to a patient's hospital visit history and medical records during shifts.
2. **Patients** – Want to view their own hospital visit data, download summaries, and share them with another facility or specialist.
3. **Hospital Stakeholders / CTOs** – Evaluate the system's scalability, compliance, and interoperability with other hospital systems.

### User Flows

#### A. Nurse Flow:

1. Log in using hospital credentials.
2. Search for a patient by name, date of birth, or ID.
3. View the Hospital Visits tab to see a chronological timeline of visits.
4. Use filters (e.g., date range, department, condition) to narrow down results.
5. Click on a visit to view details (diagnosis, procedures, medications).
6. Export a patient summary for sharing with another hospital or physician.

#### B. Patient Flow:

1. Log in to personal patient portal.
2. View all previous hospital visits under the "My History" tab.
3. Click on any visit to see details like doctor, diagnosis, or notes.

4. Download or share visit summaries in PDF or FHIR format.
5. View uploaded medical images (X-rays, MRI scans).

#### C. Hospital CTO / Stakeholder Flow:

1. Log in with administrative credentials.
2. Navigate to system dashboard to test interoperability and security settings.
3. Export a patient's data in FHIR format and simulate integration with an external system.
4. Review performance metrics (e.g., page load time, concurrent sessions).

## 4. UX Notes

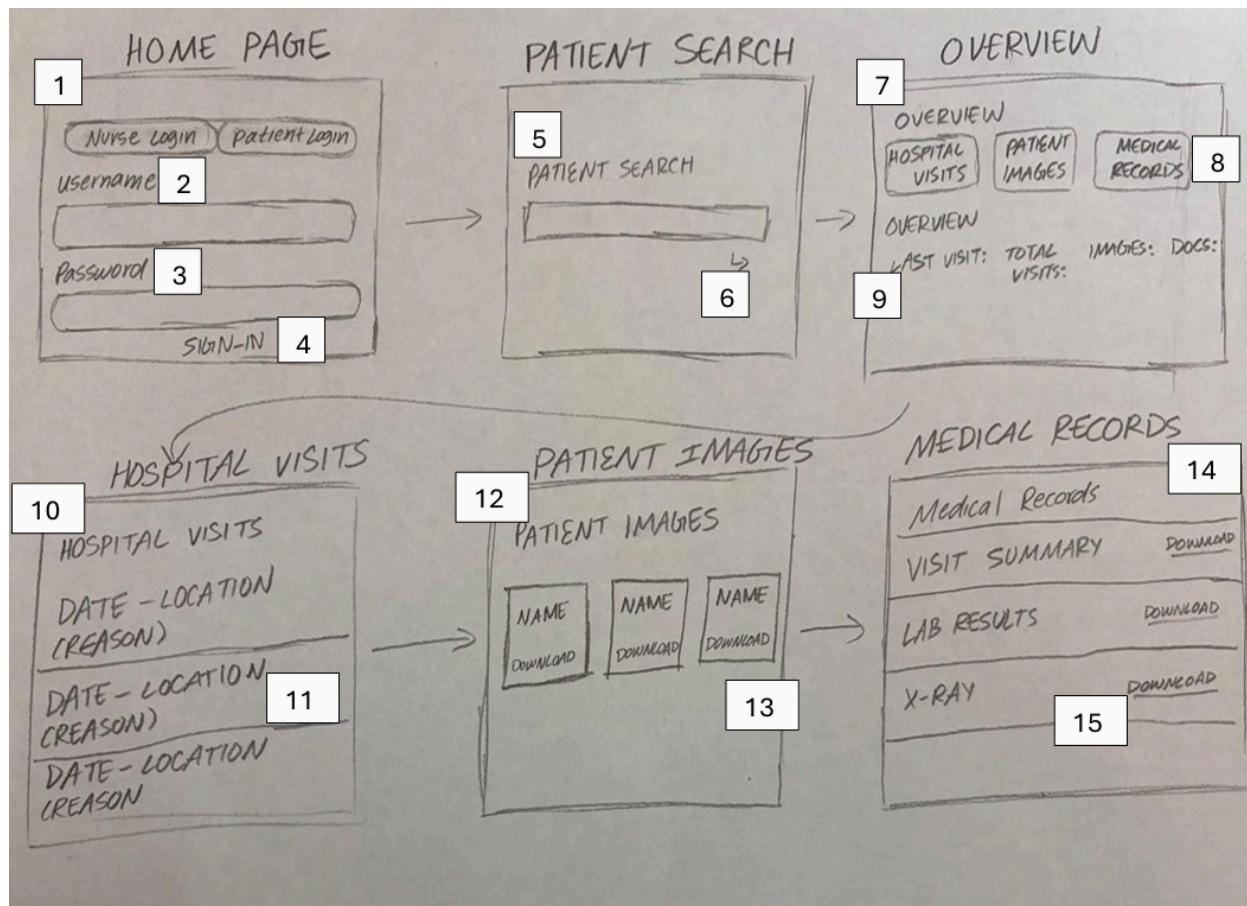
### Interface Overview:

- **Tabs:** Overview | Hospital Visits | Patient Images | Medical Records
- **Search Bar:** Always visible at top for quick lookup.
- **Filters:** Dropdowns for date range, visit type, and department.
- **Export Options:** Buttons labeled “Export” and “Share” on each major screen.
- **Timeline Design:** Horizontal or vertical list of visits showing date, reason, and department.
- **Security Cues:** Role-based visibility (patients only see their own data; nurses see assigned patients).

### Wireframe Summary (Text Description):

- **Home Screen:** Login field + Quick Search.
- **Main Dashboard:** Tabs at top, patient info card at left, detailed timeline center, export/share buttons top right.

- **Patient Portal:** Simplified layout with patient's name, past visits timeline, and “Download My Records” button.



## Annotations

### Home Page

#### 1. Login Tabs (Nurse / Patient)

Allows the user to choose whether they are logging in as a nurse or as a patient. The nurse option is active by default, and switching tabs changes which type of credentials will be validated.

#### 2. Username Field

A text field where nurses or patients type their unique ID or username. This is personal information and must be filled in to proceed.

#### 3. Password Field

A secure field for entering the account password. The characters are hidden for privacy, and it pairs with the username to authenticate access.

#### 4. Sign-In Button

The button used to log in once both fields are completed. It stays disabled until entries are provided, and once clicked, it directs the user to either patient search (for nurses) or the dashboard (for patients).

## Patient Search

### 5. Patient Search Title

Displays “Patient Search” clearly at the top, helping nurses with the task they are performing before accessing records.

### 6. Search Field + Buttons

Provides a space to enter a patient’s name or ID, with examples shown as placeholders. The nurse can click “Search” to retrieve matches or “Cancel” to exit back without searching.

## Overview

### 7. Navigation Tabs

Shows the main categories of the system: Overview, Hospital Visits, Patient Images, and Medical Records. The Overview tab is selected first, and clicking a tab changes what is displayed on screen. Also contains an overview sidebar with patient details.

### 8. Sub-Sections

The content area updates to reflect the tab that is active. For example, if “Patient Images” is chosen, the image gallery appears instead of the summary.

### 9. Overview Snapshot

Provides a quick summary of the patient’s history, such as last visit date, total visits, number of images, and number of documents. It blends general labels with personal details like hospital names and dates.

## Hospital Visits

### 10. Hospital Visits Title

The section header clearly shows that the nurse is now reviewing the patient’s history of hospital encounters. It connects with the patient details shown above (name, ID, gender, DOB, conditions, allergies) to provide continuity, the nurse can immediately confirm they are looking at the right patient before reviewing past visits.

### 11. Visit Entries

Each hospital visit entry includes the date, facility, and the reason for the encounter, along with outcomes and the attending professional. This gives context not just about the patient’s health events, but also about where the care was delivered and by whom,

helping the nurse or doctor quickly understand the medical journey across different hospitals and clinics.

### Patient Images

#### 12. Patient Images Title

Marks the section dedicated to scans or diagnostic images, ensuring the user knows what type of records they are reviewing.

#### 13. Image Thumbnails

Each image is shown as a consistent-sized thumbnail with its type and date. Nurses can click to view it in larger detail or download it if needed.

### Medical Records

#### 14. Record Categories

Lists different types of documents such as visit summaries, lab results, and radiology reports. These labels help the nurse or patient navigate record types quickly.

#### 15. Download Links

Each listed record includes a download button so the file can be accessed directly. The labels are general, but the document content is personal to the patient.

## 5. Metrics for Success

- **Task completion rate:** 90% of nurses can find a patient's visit history in under 30 seconds.
- **Error rate:** Fewer than 10% of users click incorrect tabs during navigation tests.
- **Export success:** 95% of participants successfully export or share data without help.
- **Patient comprehension:** 80% of patient participants can accurately describe their visit history after using the portal.
- **System performance:** Handles 100+ concurrent users with no visible lag in prototype testing.
- **Stakeholder satisfaction:** 4/5 or higher rating from role-playing CTOs during interoperability test.

## 6. Risks

- **Data Security Risk:** Patient data must remain secure and compliant with HIPAA; any breach could harm trust.
- **Scalability Risk:** If the system cannot handle many users simultaneously, adoption will fail.
- **Usability Risk:** Nurses operate under time pressure; even small inefficiencies may discourage use.
- **Integration Risk:** Without strong FHIR/HL7 compliance, external hospitals will not adopt the system.
- **Patient Understanding Risk:** Non-technical patients might misunderstand medical terms or navigation.
- **Maintenance Risk:** Keeping interoperability features current with evolving standards could require ongoing updates.