

Figma Prototypes for a Medical Records System

User Interface Design Report

MATSIKO IAN SEZI
2200703360, 22/U/3360/EVE

November 29, 2024

1 Project Overview

This project aims to develop and implement an electronic medical records system (EMRS) specifically designed for use by both high- and low-income earning individuals, easy to use by individuals of different education backgrounds, and accessible in all geographical and network settings. The system will address the challenges of paper-based medical records that are currently in use by providing a secure, reliable, accessible, and efficient platform for managing patients' data.

2 Problem Statement

Today, despite the various technological milestones that have been achieved worldwide, a sweeping wave that has not left out third-world countries, storage, and accessibility of patient records is still a huge challenge here in Uganda. Patients have to carry small books and at times small pieces of paper to medical centers to get their prescriptions noted. After some time when the same patient has to return to the medical center, it is usually hard to retrace these small pieces of paper, and the health facilities despite keeping huge files of patient data do not have the time to dig up previous records.

A case in point is Mulago National Referral Hospital, the biggest hospital in Uganda. Outpatients have to carry their own notebooks while in-patients are provided with files after getting admitted. These new files are issued on each visit and are not linked to files from previous visits. Additionally, Outpatients who visit the hospital for minor treatment cases and testing are issued with sheets of paper showing their test results and recorded in Ministry of Health issued books for future reference.

After a while, when MoH-issued books are filled up, they are stored away as archives which despite being freely accessible to authorized medical personnel, usually take a very long time considering the time-critical nature of medical cases.

Private hospitals have tried to come up with computerized storage and prescription systems but these are only accessible by these particular facilities and in the long run hinder collaboration and a patient visiting a different facility has to either carry copies of medical documents from previous visits which are very easy to misplace. Once they have been misplaced, tests have to be re-run and procedures re-done.

3 Project Description

This is a medical system that has facility, medic and patient interfaces. Medics can only access patient data after the patient has entered their password and fingerprint. The password alone allows access to limited data and SMS authentication gives one complete access. A patient has to have two next of kin individuals from the list of four who when they provide their passwords, can allow password-level access to medical personnel in-case the patient is unable to. The project makes use of an 2-factor authentication and password verification. Different medical personnel shall have different accessibility levels, all records are stored permanently and backup servers, at least two shall be used after the project has been fully established.

3.1 Project Objectives

To Develop an EMRS that is:

- Offline-first: The system shall function primarily offline to ensure continued operation in areas with limited or unreliable internet connectivity. Data synchronization shall occur when internet access is available.
- User-friendly: The interface shall be simple and intuitive for healthcare workers and individuals (the general population) with varying levels of technical expertise.
- Low-cost and low-maintenance: Utilize open-source technologies and minimize hardware requirements to be affordable and maintainable in resource-constrained settings.
- Secure: Implement robust data encryption and access controls to ensure patient privacy and data security.
- Interoperable: Consider future integration with existing health information systems in the country.

3.2 Target Users

- The general population
- Doctors
- Nurses
- Community Health Workers (CHWs)
- Pharmacists
- Other healthcare professionals involved in patient care

4 Lo-Fi Designs

The system's Lo-fi designs were drawn on paper and can be accessed at <https://github.com/IANSEZI/UI-Design-CBERMS/blob/main/Lo%20-%20Fi.pdf>. This document includes all pages for the 3 access types; Individual, Medical Personnel and Medical facility and also details functionalities in the last section of the document.


5 Hi-Fi Designs

The Hi-Fi designs were created using Figma, a software that allows designing and prototyping. A short video showing the prototyping and functionality of the system can be accessed at <https://drive.google.com/file/d/1FUtzowS28xPfAYGJ2oodpRPlyoBhboHu/view?usp=sharing>.

FIGMA VIEW LINK: <https://www.figma.com/design/0bgR2SCBZ0R42Za0WhiivK/Hi-Fi-Assignment?m=auto&t=QZyi73yiNY3dRsEi-1> All this information together with the screenshots, Figma links and

different documents used to compile this report can be accessed at <https://github.com/IANSEZI/UI-Design-CBERMS>

SIGN IN



INDIVIDUAL


MEDICAL PERSONNEL

FACILITY

New to CBERMS? **sign up**

(a) Sign In with different options

SIGN UP

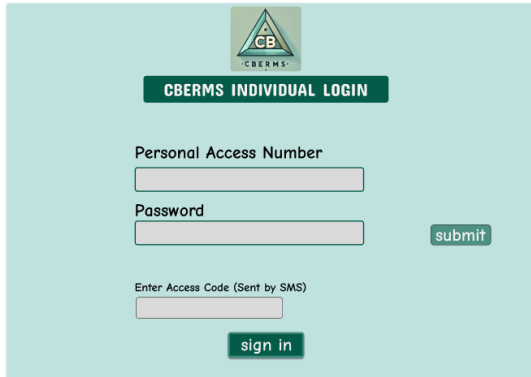


INDIVIDUAL

MEDICAL PERSONEL

FACILITY

(b) Sign Up with different options



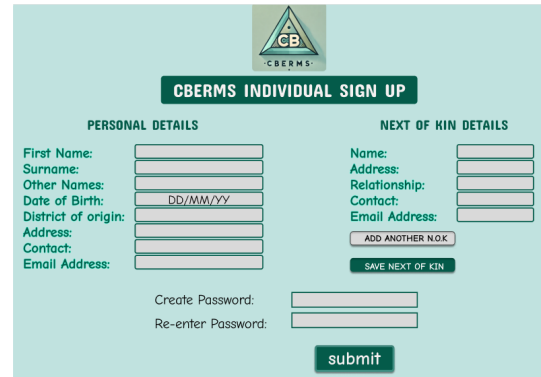
CBERS INDIVIDUAL LOGIN

Personal Access Number

Password

Enter Access Code (Sent by SMS)

(a) Individual Login



CBERS INDIVIDUAL SIGN UP

PERSONAL DETAILS

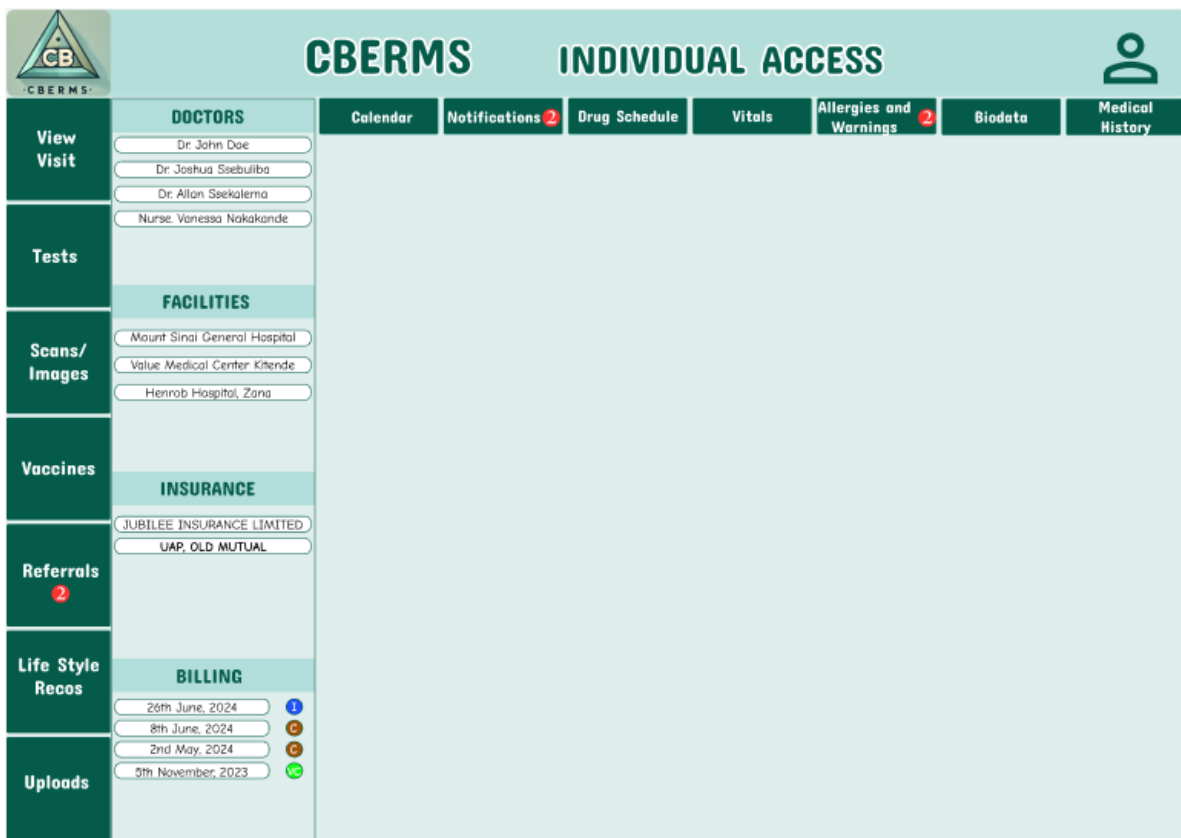
First Name:
 Surname:
 Other Names:
 Date of Birth:
 District of origin:
 Address:
 Contact:
 Email Address:

NEXT OF KIN DETAILS

Name:
 Address:
 Relationship:
 Contact:
 Email Address:

Create Password:
 Re-enter Password:

(b) Individual Sign Up



CBERS INDIVIDUAL ACCESS

DOCTORS

View Visit
 Dr. John Doe
 Dr. Joshua Seebuliba
 Dr. Allan Ssekalema
 Nurse Vanessa Nakakande

TESTS

SCANS/IMAGES

Mount Sinai General Hospital
 Value Medical Center Kitebe
 Herob Hospital, Zana

VACCINES

INSURANCE

JUBILEE INSURANCE LIMITED
 UAP, OLD MUTUAL

Referrals

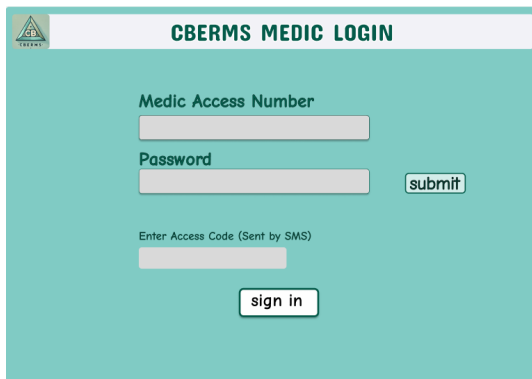
Life Style Recos

BILLING

26th June, 2024
 8th June, 2024
 2nd May, 2024
 5th November, 2023

Calendar **Notifications 2** **Drug Schedule** **Vitals** **Allergies and Warnings 2** **Biodata** **Medical History**

(c) Individual Access View



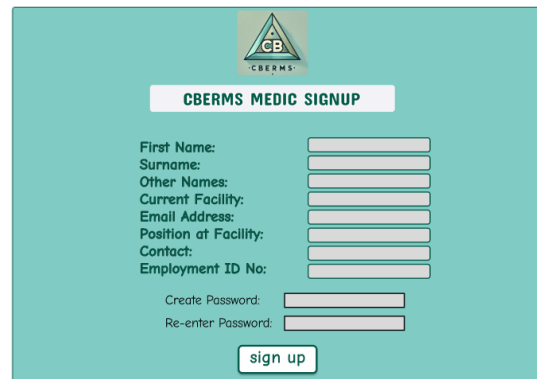
CBERMS MEDIC LOGIN

Medic Access Number

Password

Enter Access Code (Sent by SMS)

(a) Medic Login

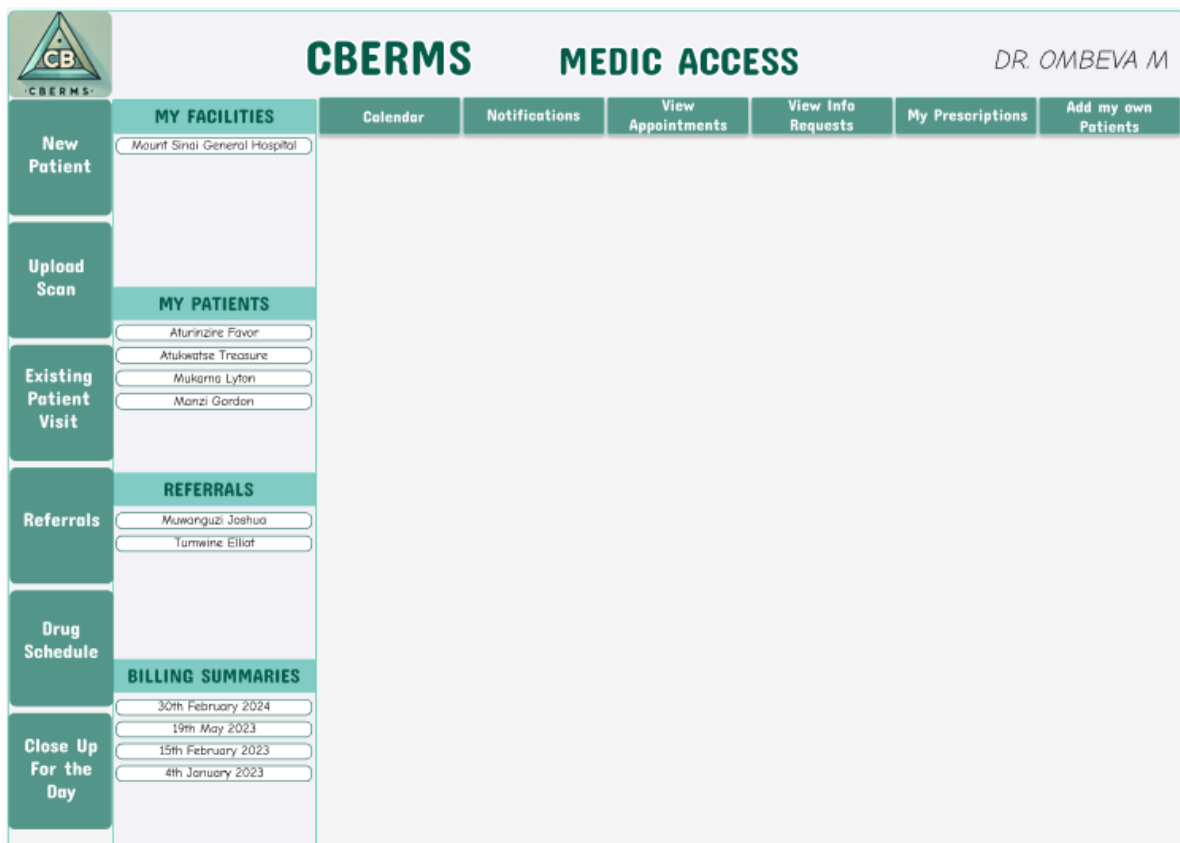


CBERMS MEDIC SIGNUP

First Name:
 Surname:
 Other Names:
 Current Facility:
 Email Address:
 Position at Facility:
 Contact:
 Employment ID No:

Create Password:
 Re-enter Password:

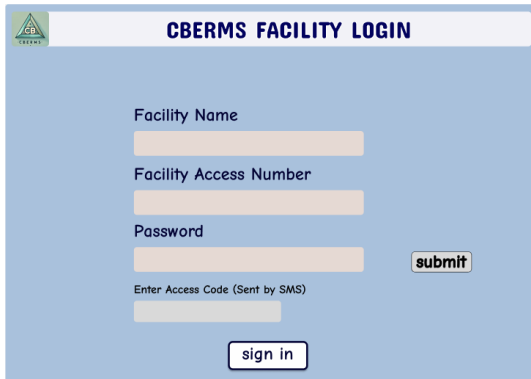
(b) Medic Sign Up



CBERMS MEDIC ACCESS DR. OMBEVA M

	MY FACILITIES	Calendar	Notifications	View Appointments	View Info Requests	My Prescriptions	Add my own Patients
New Patient	Mount Sinai General Hospital						
Upload Scan							
Existing Patient Visit	MY PATIENTS						
	Aturinzine Favor						
	Atukwatse Treasure						
Referrals	Mukama Lyton						
	Manzi Gordon						
Drug Schedule	REFERRALS						
	Muwanguzi Joshua						
Close Up For the Day							
	BILLING SUMMARIES						
	30th February 2024						
	19th May 2023						
	15th February 2023						
	4th January 2023						

(c) Medical Personnel Access View



CBERMS FACILITY LOGIN

Facility Name

Facility Access Number

Password

Enter Access Code (Sent by SMS)

submit

sign in

(a) Facility Login



CBERMS FACILITY REGISTRATION

Name Of Facility:

Location:

Official Contact:

Doctor In charge:

Doctor's Email:

Facility Email Address:

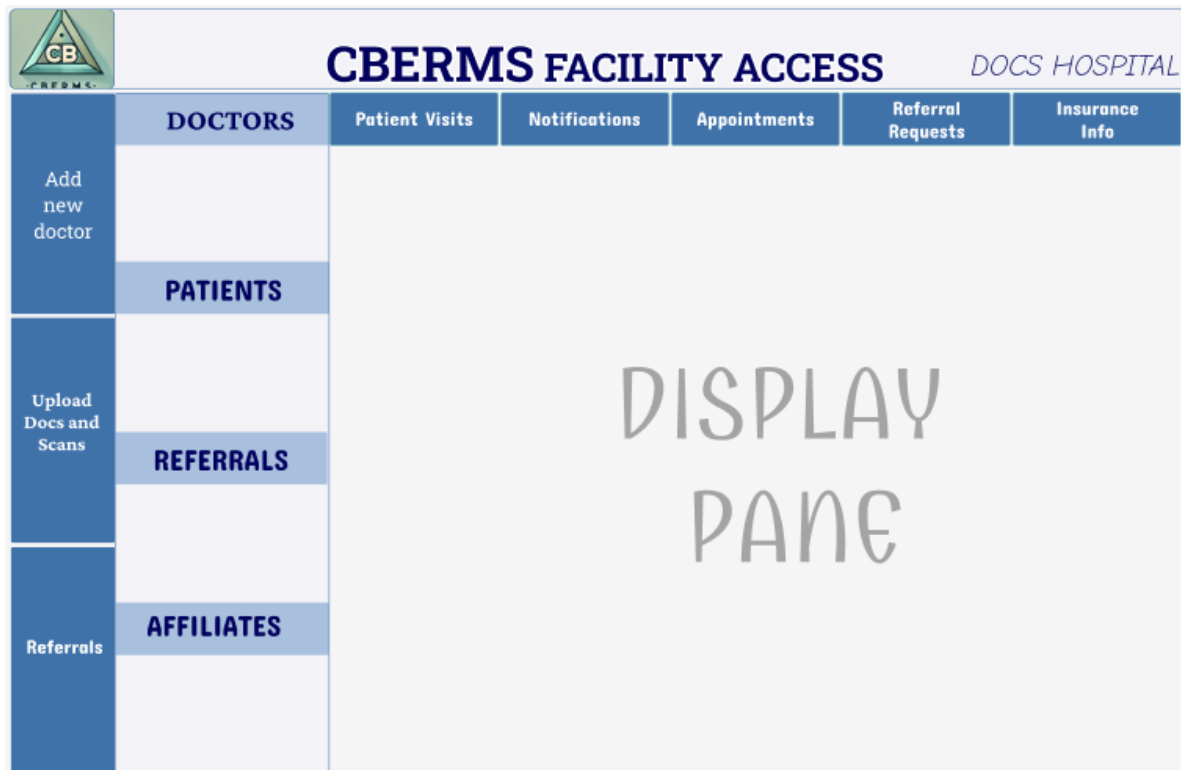
Facility Website:

Create Password:

Re-enter Password:

Register

(b) Facility Registration



CBERMS FACILITY ACCESS *DOCS HOSPITAL*

	DOCTORS	Patient Visits	Notifications	Appointments	Referral Requests	Insurance Info
Add new doctor		DISPLAY PANE				
	PATIENTS					
Upload Docs and Scans						
	REFERRALS					
Referrals						
	AFFILIATES					

(c) Medical Facility Access View

