

## 1. Introduction

**Project Overview:** AI-enabled Medical Record Summarization system

**Tech Stack:** Angular, Node.js, S3(For File Management), MongoDB

**Users:** Super User/ Super Admin - Web App

**Github repository:** <https://github.com/arpan-maruti/medical-record-management>

**Deploy link:** <https://medical-record-management.netlify.app/>

**Schema Design:** <https://dbdiagram.io/d/6788a87e6b7fa355c30c8b35c>

## 2. Module Overview

### a. Components

- 1) Login (/)
- 2) Registration(/register) [Only For Super Admin]
- 3) Otp Verification (/otp)
- 4) Case Management Dashboard (/case-management)
  - 5.1) Navbar
  - 5.2) Sidebar
  - 5.3) Case Management List (/dashboard/case-list)
  - 5.4) Add a new Case (/dashboard/add-case)
  - 5.5) Add a Subcase (/dashboard/add-subcase)
  - 5.6) Preview LOI
  - 5.7) Upload File
  - 5.8) View Files or Label
- 6) Profile (/profile)
- 7) User List(/userList) [Only for Super Admin]
- 8) Page not Found (/page-not-found)

## b. Routes

- / (landing-page)



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Email Address

Password  
 [Forgot password?](#)

- /register


## Registration

First Name

Last Name

Email Address

Phone Number  

 IN (+91) ▼

- /otp



#### MediScan - AI Tool

Verify the OTP

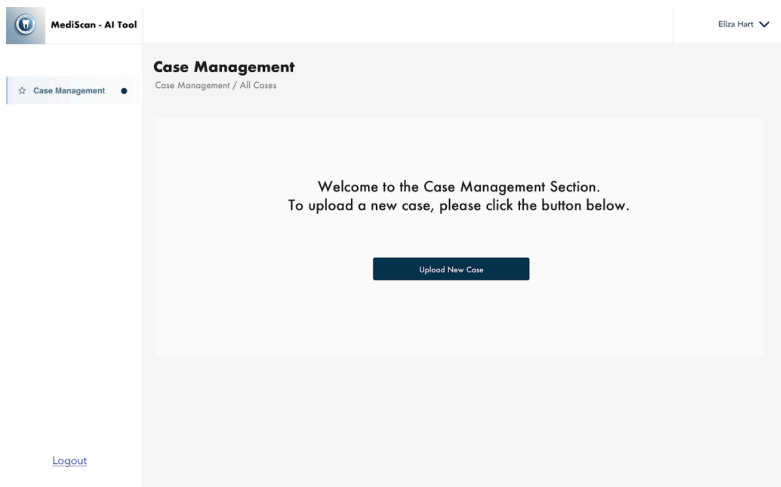
Enter OTP

Back to Login

Verify OTP

Internal Use

- /case-management



- /case-management/all-cases

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Case Management

Case Management / All Cases

Filter By Case Status

All Cases

Search by Client Name, Case uploaded by(Name)

Upload New Case

Case Ref No	Instruction Type	Client Name	Total No Of Files	Total No of Pages Supplied By IP (instructed party)	Date Of Case Uploaded	Case Uploaded By	Case Status	LOI	Action	Add Subcase		
RO11011	Breach of Duty	Robets Dsouza	12	50	01 Nov 2024	Kim Tim	Uploaded	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">Generate Summary</a>	+
RO11011A	Condition and Prognosis Report	Robets Dsouza	10	20	03 Sept 2024	Ruby Reubs	Uploaded	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">Generate Summary</a>	+
RO11011B	Screening/Summary Report	Robets Dsouza	05	10	02 Sept 2024	Ruby Reubs	InProgress	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">Generate Summary</a>	+
RO11022	Liability / Breach of Duty and Causation	Miley Cyrus	10	20	02 August 2024	Super Admin	AI Analysis Completed	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">View Summary</a>	+
RO11033	Personal Injury	Sabrina Mastly	09	50	10 July 2024	Ruby Reubs	AI Analysis Completed	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">View Summary</a>	+
RO11044	Personal Injury	Maris Powes	02	20	10 June 2024	Ruby Reubs	Error	<a href="#">View LOI</a>	<a href="#">Upload Files</a>	<a href="#">View Or Label Files</a>	<a href="#">Generate Summary</a>	+

Logout

- /case-management/upload-new-case

Select the parameters will vary depending on the Instruction type and type of LOI selected.

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Case Management

Case Management / Upload New Case

Upload New Case

Client Name

Case Reference Number

What type of LOI?

Date of Breach / liability

Robets Dsouza

RO11011

Clinical Negligence

15-11-2018

Upload Letter of Instruction (LOI)

Instruction Type

Liability / Breach of Duty ( alone) [ clinical negligence]

SELECT THE PARAMETERS

☒ Records with the same Date as the breach / liability

☒ Records that Pre date the date of the index event medical records , by more than 10 years

☒ Records that Pre date the date of the index event medical records , more than 1 year but less than 5 years

☒ Records that Pre date the date of the index event medical records , by less than 1 year

☒ All records that post date the date of the index event

Submit

Logout

## - /case-management/add-subcase

Select the parameters will change according to the Instruction type and type of LOI selected.

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Case Management

Case Management / Main Case / Upload Subcase

Upload SubCase

Client Name

Parent Case Reference Number

Sub Case Reference Number

Roberts Dsouza

RO11011

RO11011A

Upload Letter of Instruction (LOI)

Instruction Type

What type of LOI?

Date of Breach / liability

Liability / Breach of Duty ( alone ) [ clinical negligence ]

Clinical Negligence

15-11-2018

SELECT THE PARAMETERS

☒ Records with the same Date as the breach / liability

☒ Records that Pre date the date of the index event medical records , by more than 10 years

☒ Records that Pre date the date of the index event medical records , more than 1 year but less than 5 years

☒ Records that Pre date the date of the index event medical records , by less than 1 year

☒ All records that post date the date of the index event

[Logout](#)

Submit

## - /case-management/preview-loi

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Case Management

Case Management / All Cases

All Cases

Case Ref No.	Instruction Type	Client Name
RO11011	Liability / Breach of Duty ( alone )	Roberts Dsouza
RO11011A	Condition and Prognosis Report	Roberts Dsouza
RO11011B	Screening/Summary Report	Roberts Dsouza
RO11022	Liability / Breach of Duty and Causation (combined)	Atulay Chandra
RO11033	Personal Injury	Solomon M
RO11044	Personal Injury	Maria P

Download PDF

dpg

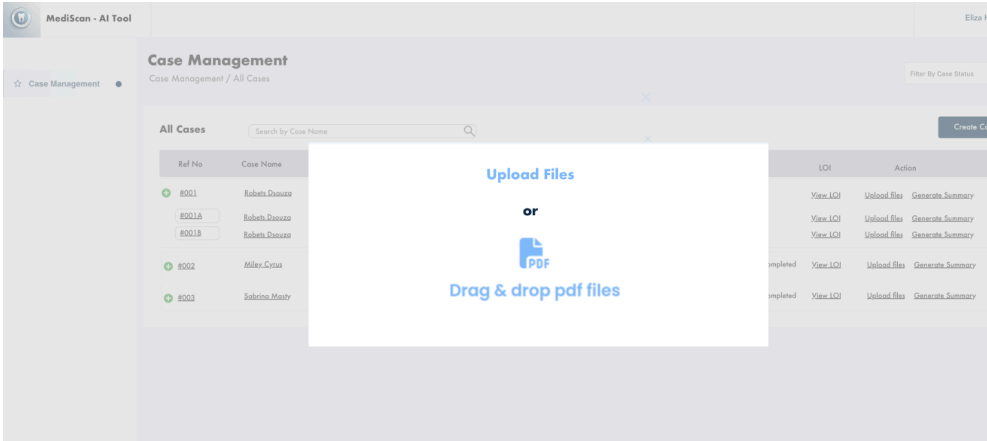
Dr Zephania Hyder  
Consultant Surgeon (General and Colorectal)  
Via email only: myag@orthomedicalexperts.com

Dear Dr Hyder  
**Manuscript Draft (Date of Draft: 06.01.1985)**  
Thank you for agreeing to prepare an expert report for our client Mr Manuscript Draft based on an assessment of his medical records alone.  
  
Documents  
A OneDrive link to our client's medical records has been shared with you separately. The OneDrive folder comprises:  
  
(A) An electronic bundle of medical records, including MRI pages, which include:  
1. Police healthcare records from HSP Loutham George  
2. Records from University College London Hospital  
3. Records from Warwick Medical School Foundation Trust  
4. Police healthcare records from HSP Solihull  
  
(B) Scan Images from University College London Hospital  
  
(C) Scan Images from Medway Maritime Hospital  
  
Please note that Mr Goff's medical records have an alternative spelling of his name (Manuscript Draft). Please note also that Mr Goff's medical records have been shared with you separately. The OneDrive folder comprises:  
1. Police healthcare records from HSP Loutham George  
2. Records from University College London Hospital  
3. Records from Warwick Medical School Foundation Trust  
4. Police healthcare records from HSP Solihull  
  
We are grateful for your assistance and look forward to receiving your report and opinion on the matter of Mr Goff's medical records.  
  
Yours faithfully,  
Dr Zephania Hyder  
Consultant Surgeon (General and Colorectal)  
Via email only: myag@orthomedicalexperts.com

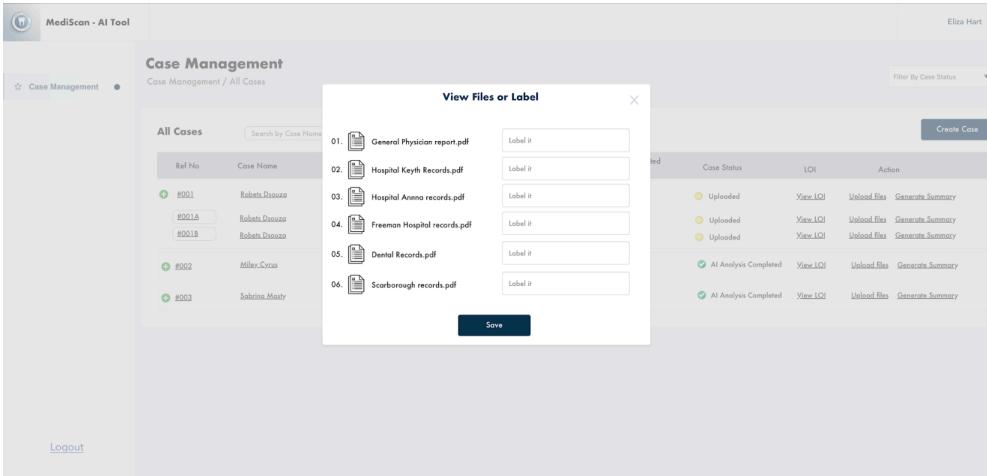
Case Ref No.	Case Status	LOI	Action	Add Subcase
RO11011	Uploaded	Yates LOI	Upload File	Generate Summary
RO11011A	Uploaded	Yates LOI	Upload File	Generate Summary
RO11011B	In Progress	Yates LOI	Like Unloaded	Generate Summary
RO11022	AI Analysis Completed	Yates LOI	Upload File	Yates Summary
RO11033	AI Analysis Completed	Yates LOI	Upload File	Yates Summary
RO11044	AI Analysis Completed	Yates LOI	Upload File	Yates Summary

[Logout](#)

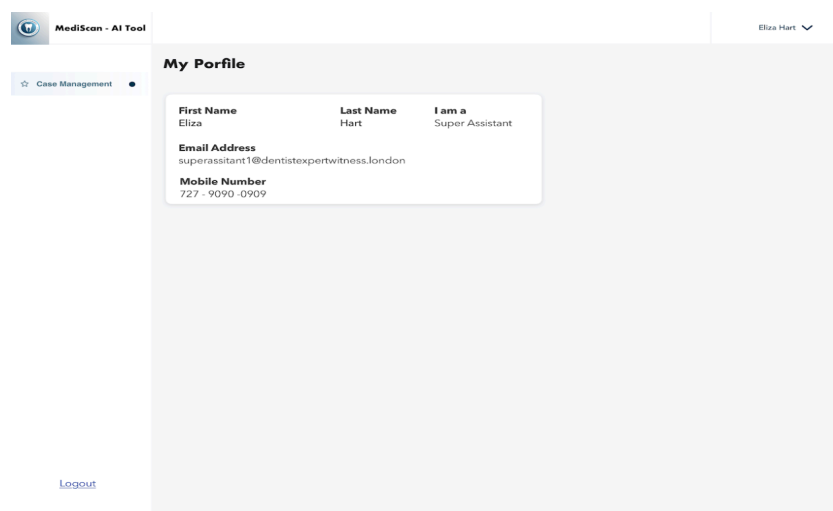
- /case-management/upload-file



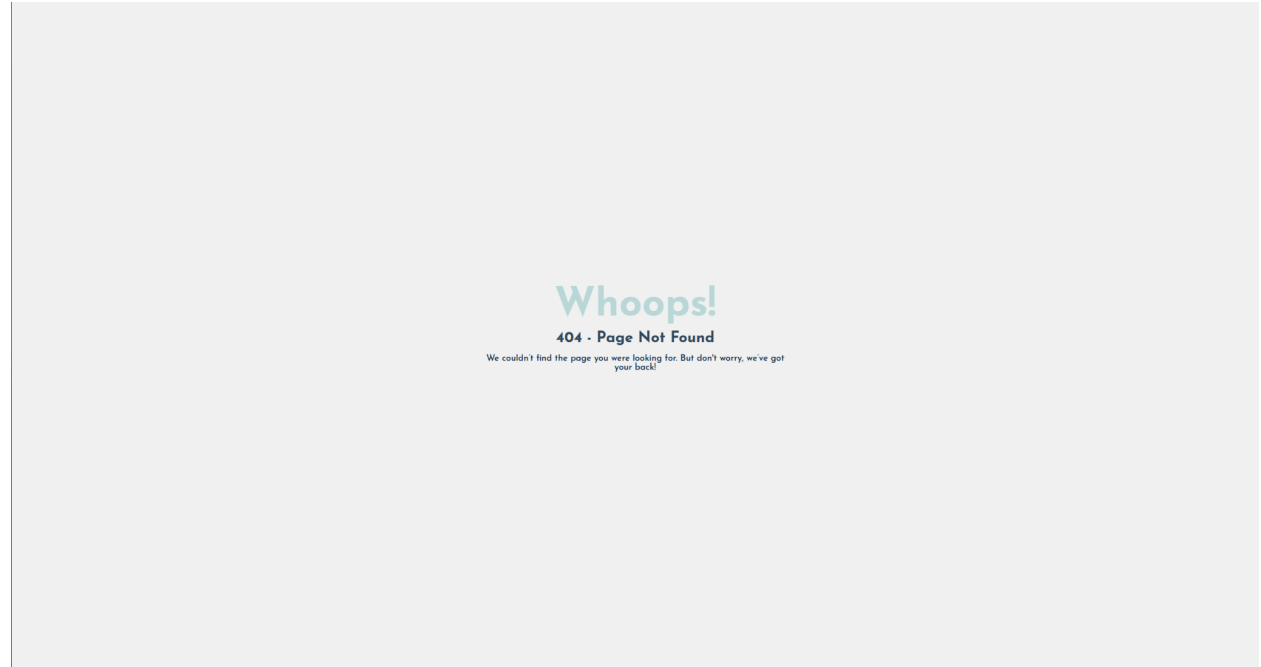
- /case-management/view-files-or-labels



- /case-management/profile



- /page-not-found



## c. Functional Requirements

### 1) Login-user

**Description:** Authenticate user, manage sessions and protect data(encrypt data at REST).

**Input:**

- Email: email provided by user.
- Password: password set by user.

**Output:**

- **Success:** Redirects to verify otp.
- **Failure:** Returns an error message for invalid credentials ("Invalid email or password."), empty fields ("Please enter both email and password."), if the user is idle for more than 30 minutes ("Your session has expired. Please log in again.").
- **Forgot Password:** Display message "Please contact BME to reset your password."

### 2) 2FA - OTP Verification

**Description:** Verifies the user's identity through Two-Factor Authentication (2FA) after successful login.

**Input:**

- Phone number: User's provided company-registered Mobile number.
- otp: The One-Time Password (OTP) entered by the user, sent to their registered mobile number.

**Output:**

- **Success:** If the correct OTP is entered, the user is redirected to the main screen or dashboard.
- **Failure:** Returns an error message for incorrect or expired OTP ("Invalid OTP. Please try again."), empty fields ("Please enter the OTP."), or multiple incorrect attempts ("Too many incorrect attempts. Please try again later.").
- **Resend OTP:** If the user has not received or misplaced the OTP, they can click "Resend OTP" to trigger a new OTP being sent to their registered mobile number.

### 3) Case Management - No Cases Created

**Description:** Displays a welcome message with an option to add a new case if no cases have been created, and handles navigation to the case creation screen.

**Input:**



- User Login: The Super Assistant or Super Admin logs in to the BME tool.
- System State: The system checks if any cases have been created by the logged-in user.

### Output:

- **Success:**
  - If no cases have been created, display a welcome message("Welcome to the Case Management Section. To upload a new case, please click the button below.") and an "Add New Case" button.
  - If cases have already been created, display the list of existing cases without the welcome message.
- **Failure:** If there's a system error when trying to load the case creation screen, show an error message("Unable to load the case creation screen. Please try again later.") and remain on the welcome screen.

## 4) Create Case / Upload Case

**Description:** Allows Super Assistant or Super Admin to create and manage case details by entering required fields and uploading necessary documents.

### 4.1 Client Name

- Valid Input: Alphabetic characters, '-', ' ', '.',
- Invalid Input: "Invalid input. Please enter a valid client name."
- Empty Field: Displays "*Client Name is required.*"

### 4.2 Case Reference Number

- Valid Input: Accepts unique case reference.
- Duplicate Input: Displays "*This case reference number already exists.*"
- Empty Field: Displays "*Case Reference Number is required.*"

### 4.3 What Type of LOI

- Valid Selection: Accepts data from the dropdown (database-managed).
- Empty Field: Displays "*LOI Type is required.*"

### 4.4 Date of Breach / Liability or Date of Index Accident

- Valid Date: Selects date from calendar.
- Invalid Format: Displays "*Invalid date format. Please select a date from the calendar.*"
- Empty Field: Displays "*Date is required.*"

### 4.5 Instruction Type

- Valid Input: Accepts selection based on LOI type.
- Empty Field: Displays "*Instruction type is required.*"

### 4.6 Upload LOI PDF

- Valid Upload: Accepts PDF/Word file, max 200 MB.
- Invalid File: Displays "*Invalid file type. Please upload a PDF document.*"
- Empty Field: Displays "*LOI PDF is required.*"

### 4.7 LOI Parameters

- Valid Selection: At least one parameter must be selected; others can be unchecked.

#### **4.8 Case Submission**

- Valid Submission: Saves case, redirects to Case Management screen with *"Case successfully created."*
- Incomplete Fields: Prevents submission, displays missing fields.
- System Error: Displays *"Unable to create a case at this time."*

### **5) Business Logic for Case and File Management**

#### **5.1 Total Number of Allowed Cases:**

- Limit: 10 cases allowed across all users.

#### **5.2 Files per Case/Sub-case:**

- Limit: Each case or sub-case can have a maximum of 10 files.
- Total Limit: Across all cases and sub-cases, a maximum of 100 files is allowed.

#### **5.3 Maximum File Size:**

- Limit: Each file must not exceed 500 MB. Any file larger than this will be blocked from uploading.

### **6) Case Management - With Cases Listed**

#### **6.1 Case Listing and Viewing**

- Table Columns: Includes Case Reference Number, Instruction Type, Client Name, Number of Files, Number of Pages, Date Created, Created By, Case Status, View LOI, and Actions (Upload Files, View or Label Files, Generate Summary, View Summary).
- Case Visibility: Super Assistants can view cases created by others.

#### **6.2 Filtering Cases by Status**

- Status Filter: Users can filter cases by status (e.g., "Uploaded," "AI Analysis Completed").
- No Matches: If no cases match, a message "No cases found" is shown.

#### **6.3 Searching Cases**

- Search by Client or Creator: Users can search by client name or case creator.
- No Matches: Displays "No cases found matching the search criteria."

#### **6.4 Case Actions**

- Upload Files: Users can upload PDF/Word files. The "Generate Summary" button is enabled once files are uploaded.
- Generate Summary: Starts AI analysis, with confirmation message displayed.
- Error: If summary generation fails, shows "Unable to generate summary."

#### **6.5 Creating a Subcase**

- Create Subcase: Clicking "+" for a subcase pre-fills certain fields.
- Form Submission: Subcase is saved if all required fields are completed, with error if parameters(one loi parameter is compulsory) are missing.
- View Subcases: Expands/collapses subcases for parent cases with an icon.

#### **6.6 User Interface and Navigation**

- Page Refresh: System resets filters and search criteria.
- Session Expiry: Redirects to login page with expiry message("Your session has expired. Please log in again.).

### **7) Profile Management for Super Assistant / Super Admin**

Acceptance Criteria:

#### **7.1 Navigate to Profile Page**

- Given the user is logged in as a Super Assistant or Super Admin,
- When the user navigates to their profile page,
- Then the system should display the profile page.

#### **7.2 Profile Page Information**

- The profile page should display the following non-editable details:
  - First Name
  - Last Name
  - User Role
  - Email Address
  - Mobile Number

### **7.3 Edit Restrictions**

- The user cannot edit any of the fields on the profile page.