

Domiciliary Clinic System Analysis Documentation

1. Introduction

1.1 Purpose

This document provides a comprehensive analysis of the domiciliary clinic management system, outlining the system requirements, use-case scenarios, workflow diagrams, and architectural design. The goal is to replace manual processes with an integrated digital solution for managing home-based medical services efficiently.

1.2 Scope

The system will facilitate patient registration, scheduling home visits, managing medical records, tracking staff shifts, and generating reports. It will cater to contract-based doctors, nurses, and administrative personnel, ensuring smooth operations.

1.3 Stakeholders

- **Patients** – Individuals receiving medical care at home.
 - **Doctors & Nurses** – Healthcare professionals providing domiciliary services.
 - **Administrative Staff** – Personnel handling scheduling, records, and patient communication.
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2. System Requirements Specification (SRS)

2.1 Functional Requirements

1. Staff and Shift Management

- Maintain staff profiles (specialization, availability, contact details).
- Schedule shifts and home visits.
- Manage staff availability, absences, and substitutions.

2. Patient Registration & Appointment Management

- Store patient personal and insurance details.
- Schedule, modify, and cancel home visit appointments.
- Provide calendar views for doctors and nurses.
- Send automated notifications (SMS/email reminders).

3. Electronic Medical Records (EMR)

- Securely document patient visits, treatments, and prescriptions.

- Maintain medical history, diagnoses, test results, and doctor's notes.
- Implement search functionalities for quick access.

4. Home Visit & Resource Management

- Track home visit assignments to medical staff.
- Ensure optimal distribution of appointments.
- Monitor real-time status of ongoing visits.

5. Billing & Insurance Processing

- Process payments for home visits.
- Integrate insurance claim submission and tracking.

6. Reporting & Analytics

- Generate reports on patient visits, staff workload, revenue, and service efficiency.
- Provide insights into average patient waiting times and appointment trends.

2.2 Non-Functional Requirements

- **Security:** Data encryption and role-based access control.
 - **Scalability:** Ability to accommodate more patients and healthcare providers.
 - **Usability:** Intuitive UI/UX for medical and administrative staff.
 - **Reliability:** 99.9% uptime to ensure uninterrupted service.
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3. Use-Case Diagrams

- **Use-Case 1:** Patient Registration and Appointment Scheduling
- **Use-Case 2:** Staff Shift Management
- **Use-Case 3:** Electronic Medical Records Management
- **Use-Case 4:** Home Visit Allocation
- **Use-Case 5:** Reporting and Analytics

(Diagrams will be attached separately)

4. Workflow Diagrams

1. Patient Registration Process

- Patient provides details → System records information → Confirmation sent to patient.

2. Appointment Scheduling Process

- Patient requests a visit → System checks doctor availability → Appointment confirmed → Notification sent.

3. Home Visit Workflow

- Doctor assigned → Visits patient → Updates medical records → Completes visit.

4. Billing and Insurance Process

- Invoice generated → Payment processed/insurance claim submitted → Confirmation sent.

(Diagrams will be attached separately)

5. System Architecture Design

5.1 System Components

- **Frontend:** React.js for user interface.
- **Backend:** Django or Node.js for API and business logic.
- **Database:** MySQL or PostgreSQL for structured data storage.
- **Authentication:** Role-based access control with JWT authentication.
- **Notifications:** Twilio for SMS, SendGrid for emails.

5.2 High-Level Architecture

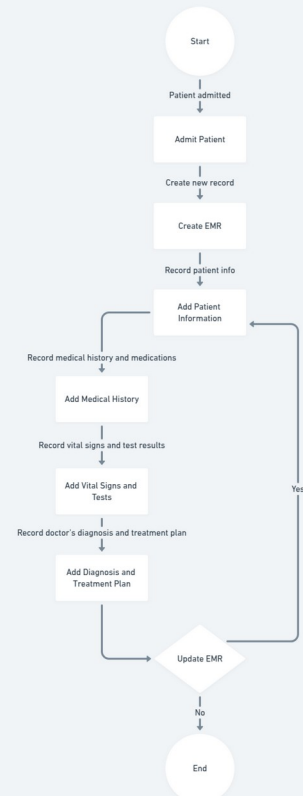
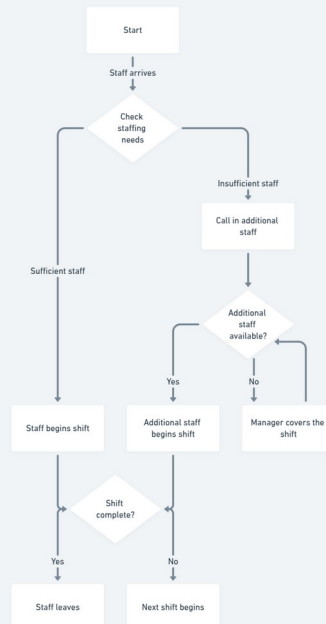
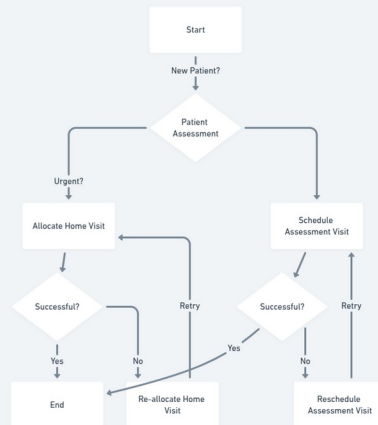
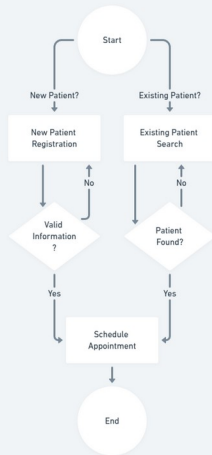
- **User Access Layer:** Web and mobile interfaces.
- **Business Logic Layer:** Appointment scheduling, EMR, and reporting.
- **Data Layer:** Securely stored patient records and system logs.
- **Integration Layer:** Insurance APIs, SMS/email notification services.

(Diagrams will be attached separately)

6. Conclusion

This system aims to modernize domiciliary clinic operations by digitizing patient records, streamlining scheduling, and improving healthcare service efficiency. By implementing this software, the clinic will enhance patient care, optimize resource allocation, and ensure compliance with medical data regulations.

Use case Diagrams



Healthcare Management System Use-Case Diagrams

Healthcare Process Flowchart

