TCS-MediConnect-AI-Powered-Patient-Hospital-Management-CRM-Portal

Project Implementation Phases Documentation

Phase 1: Problem Understanding and Industry Analysis

Problem Statement

Families and healthcare providers face challenges in scheduling home nurse visits, tracking medication adherence, coordinating doctor follow-ups, and analyzing patient health feedback for improved elderly care. Manual coordination often leads to missed visits, medication errors, delayed follow-ups, and poor visibility into patient satisfaction. CareConnect aims to leverage Salesforce AI-powered CRM features to automate scheduling, provide predictive adherence alerts, facilitate doctor coordination, and analyze feedback using NLP.

Project Goal

Develop a Salesforce-based CareConnect CRM Portal that:

- Automates home nurse visit scheduling and suggests optimal visit times based on nurse availability and patient needs using AI.
- Tracks prescriptions and medication schedules, predicts adherence risk, and sends reminders to patients and caregivers.
- Coordinates doctor follow-up appointments with calendar integration and AI-driven peak need predictions.
- Collects and analyzes patient or family feedback with NLP-powered sentiment analysis.
- Provides a virtual health assistant chatbot for FAQs related to medication, exercises, doctor availability, and emergency guidance.
- Manages billing and insurance through payment gateway and insurance claims APIs with AI-powered anomaly detection.

Requirement Gathering

Business Needs:

- Integrated system for nurse visit scheduling, medication tracking, doctor appointments, feedback collection, and billing.
- Automated workflows for scheduling, notifications, and escalations.
- AI-driven predictive insights for medication adherence risks and appointment needs.
- Dashboards for caregivers and admins to monitor patient care and service quality.

Functional Requirements:

- Nurse Visit Object: Patient, Nurse, Visit Date/Time, Status.
- Medication Object: Prescription Details, Dosage, Schedule, Adherence Status.
- Doctor Follow-up Object: Patient, Doctor, Appointment Date, Status.
- Feedback Object: Patient/Family Feedback, NLP Sentiment Score.
- Billing Object: Payment Info, Insurance Claims, Gateway Integration.
- Chatbot Module: NLP FAQs and emergency guidance chatbot.

- Automation Rules: Scheduling validations, reminders, alerts for adherence risk.
- Notifications: SMS/Email/Push for visits, medication, appointments, billing.

Non-Functional Requirements:

Mobile-responsive design for patients, caregivers, nurses, and doctors.

Role-based access for data security and compliance.

Stakeholder Analysis

- Elderly Patients & Families: Book nurse visits, receive medication reminders, provide feedback, and access chatbot support.
- Home Nurses: View assigned visits, update visit status, communicate with families.
- Doctors: Receive alerts for required follow-ups, update consultation records.
- Caregivers: Monitor medication adherence, receive alerts, communicate with healthcare team.
- Healthcare Admins: Manage schedules, billing, insurance claims, and oversee care quality metrics.
- Insurance Providers: Receive and validate claims via API integration.

Business Process Mapping

Current Manual Process:

Families or staff manually schedule nurse visits -> Medication reminders are manual or absent -> Doctor follow-ups tracked separately -> Feedback is collected via phone or paper

-> Billing and claims are fragmented -> No real-time alerts or AI insights.

Proposed Salesforce Process (CareConnect CRM):

1. Patients or caregivers schedule nurse visits online or via staff entry.

2. AI suggests optimal visit times based on nurse availability and patient needs.

3. Medication schedules are tracked and adherence risk alerts generated.

4. Doctor follow-up appointments coordinated through Salesforce calendar with AI predictions on peak times.

5. Automated notifications sent for visits, medication, and appointments.

6. Patient/family feedback collected via app with NLP sentiment analysis.

7. AI-powered chatbot assists with FAQs and emergencies.

8. Billing processed through integrated payment gateways and insurance APIs with anomaly detection.

9. Dashboards track patient adherence, visit success, and service satisfaction.

Industry-Specific Use Cases

- Home Nurse Visit Scheduling with AI recommendations.
- Medication adherence tracking with predictive risk alerts.
- Doctor follow-up coordination linked to patient care timelines.

- Patient/caregiver feedback analysis using NLP sentiment scoring.
- Virtual Health Assistant chatbot for support and emergency guidance.
- Billing and insurance claim automation with anomaly detection.

AppExchange Exploration

- Health Cloud: Base platform for patient and healthcare management.
- Notification Apps: SMS/Email/push notification management.
- Payment and Insurance APIs: For billing and claims processing.
- Einstein AI: AI & NLP for scheduling optimization, adherence prediction, and sentiment analysis.
- LWC/Visualforce: Patient and caregiver portals, dashboards, and chatbots.

Phase 1 Summary

By completing Phase 1, the CareConnect team will have:

- Analyzed challenges in home healthcare coordination and patient monitoring.
- Defined key stakeholders and their roles in the care process.
- Documented current manual workflows and Salesforce-driven enhancements.
- Captured functional and non-functional system requirements.
- Explored existing Salesforce and AppExchange solutions for integration.