MediCare Pharmacy CRM: Automated Prescription & Medication Management System

Industry: Healthcare & Pharmacy

Target Users: Doctors, Pharmacists, Patients, Healthcare Providers, Insurance Companies

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Phase 1: Problem Understanding & Industry Analysis

In the healthcare industry, prescription management is still widely paper-based, leading to inefficiencies. Patients often forget to request refills, resulting in missed doses. Doctors cannot track adherence effectively, and pharmacists struggle with inventory planning due to lack of real-time integration.

Key activities in this phase:

- **Requirement Gathering:** Collect inputs from doctors, pharmacists, patients, and insurers. Example: Doctors need visibility into patient adherence, patients want timely refill reminders, and pharmacists need inventory tracking.
- **Stakeholder Analysis:**
  - **Doctors** – issue and approve prescriptions.
  - **Pharmacists** – dispense medications and track stock.
  - **Patients** – request refills and receive reminders.
  - **Admins/Healthcare Providers** – ensure compliance and reporting.
- **Business Process Mapping:** Compare manual prescription → refill → stock workflows with a future automated CRM-driven process.
- **Industry-Specific Analysis:** Study HIPAA and GDPR compliance for secure patient health data.
- **AppExchange Exploration:** Identify healthcare apps to inspire functionality.

Phase 2: Org Setup & Configuration

Once requirements are understood, a Salesforce org must be set up to support prescription workflows.

Key activities in this phase:

- **Org Setup:** Create a Developer Org named *MediCare Pharmacy CRM*.
- **Company Profile Setup:** Define business hours (pharmacy 9 AM – 9 PM) and holidays.
- **User Setup:**

    - Admin (superuser), Doctor, Pharmacist, Patient (Experience Cloud).
- **Roles & Profiles:**
    - Role Hierarchy: Admin → Doctor → Pharmacist → Patient.
- **Security Model:**
    - OWD (Private for Patients, Controlled access for Doctors/Pharmacists).
    - Permission Sets: Doctor approval rights, pharmacist inventory management rights.
- **Sandboxes:** Created for testing and UAT before production deployment.

Phase 3: Data Modeling & Relationships

Prescription workflows require custom objects and relationships.

Custom Objects:

- **Prescription:** Patient, Doctor, Date, Expiry, Status.
- **Medication:** Name, Dosage, Frequency, Stock Qty.
- **Refill Request:** Linked to Prescription, Status (Pending/Approved/Rejected).
- **Adherence Log:** Track if the patient marked medicine as taken.
- **Pharmacy Inventory:** Tracks medicine stock and expiry.

Relationships:

- Patient → Prescription (Master-Detail).
- Prescription → Medication (Junction Object).
- Prescription → Doctor (Lookup).
- Prescription → Refill Request (Lookup).

Record Types:

- New Prescription vs Refill Request.

This ensures structured, scalable data storage to capture all required details.

Phase 4: Process Automation (Admin)

Manual processes must be replaced with automated workflows.

Key Automations:

- **Validation Rules:**
    - Prescription Expiry must be after Issue Date.

    - Refills only allowed if Prescription is active.
- **Flows:**
    - Reminder Flow → Notify patients 3 days before refill due.
    - Low Stock Flow → Notify pharmacist when stock < threshold.
- **Approval Process:**
    - Refill request submitted by patient → sent to doctor → approval/rejection → pharmacist notified.
- **Notifications:**
    - Patients → SMS/Email reminders.
    - Pharmacists → Task created for refill processing.

Phase 5: Apex Programming (Developer)

Where declarative tools fall short, Apex ensures complex automation.

Key Developments:

- **Triggers:**
    - On Prescription Insert → Auto-create first Refill Request.
    - On Refill Approval → Update Inventory stock.
- **Batch Apex:** Weekly → Analyze prescriptions and mark overdue adherence cases.
- **Scheduled Apex:** Daily → Send adherence reminders.
- **Queueable Apex/Future Methods:** Callouts to pharmacy inventory APIs.
- **Test Classes:** Ensure 80%+ code coverage to validate logic and maintain deployment readiness.

Phase 6: User Interface Development

The user experience must be simple for patients, doctors, and pharmacists.

Key Deliverables:

- **Lightning App:** Pharmacy CRM App with tabs (Prescriptions, Medications, Refills, Reports).
- **Doctor Interface:** Approve prescriptions/refills, monitor adherence logs.
- **Pharmacist Interface:** See pending refills, manage inventory stock.
- **Patient Portal (LWC):**

    - View active prescriptions.
    - Request refills online.
    - Receive reminders & log doses.
- **Custom LWCs:**
    - "Request Refill" Button.
    - "Medication Calendar" where patients log taken doses.

Phase 7: Integration & External Access

Healthcare workflows need third-party integration.

Integrations:

- **Pharmacy Inventory System:** Check stock availability in real-time.
- **SMS Gateway:** Send reminders.
- **Telemedicine Platform:** Sync prescriptions with doctor consultations.
- **Authentication:** OAuth for secure patient login; Named Credentials for APIs.

Phase 8: Data Management & Deployment

Smooth migration and deployment ensure system reliability.

Activities:

- **Data Import Wizard:** Upload drug catalog.
- **Data Loader:** Import historical prescriptions.
- **Duplicate Rules:** Avoid duplicate patient/prescription records.
- **Backup:** Weekly scheduled data exports for compliance.
- **Deployment Path:** Sandbox → UAT → Production (Change Sets/SFDX).

Phase 9: Reporting, Dashboards & Security Review

Reports and dashboards bring visibility; security ensures compliance.

Reports:

- Active Prescriptions per Doctor.

- Pending vs Approved Refills.
- Medication stock nearing expiry.
- Patient Adherence % by month.

Dashboards:

- **Doctor Dashboard:** Patient adherence trends.
- **Pharmacist Dashboard:** Stock & pending refills.
- **Admin Dashboard:** System usage & compliance metrics.

Security Measures:

- Field-Level Security for medical data.
- Session settings & IP restrictions.
- Audit Trail for compliance tracking.

Phase 10: Final Presentation & Demo Day

Final delivery showcases business value.

Steps:

1. **Pitch Presentation:** Problem, Solution, Benefits.
2. **Live Demo:**
    - Doctor issues prescription.
    - Patient requests refill.
    - Doctor approves → Pharmacist updates inventory.
    - Patient receives reminder.
    - Dashboard updates adherence %.
3. **Feedback Collection:** Gather insights from stakeholders.
4. **Documentation & Handoff:** Provide training guides and admin manuals.
5. **Portfolio Showcase:** Upload to LinkedIn/GitHub.

Expected Outcomes & Benefits

- Patients get timely reminders → **higher adherence**.
- Doctors track patient compliance → **improved treatment outcomes**.

- Pharmacists manage stock efficiently → **fewer shortages**.
- Admins monitor compliance and efficiency → **better reporting & ROI**.
- Overall → Reduced missed doses, optimized operations, and improved healthcare quality.

Solution (Scenario-Based)

John Doe, a patient, visits Dr. Smith for a routine checkup. Dr. Smith diagnoses an infection and prescribes Amoxicillin 500mg for 7 days. In the traditional system, this prescription would be written on paper, handed to John, and eventually submitted to the pharmacy. This approach often causes delays, lost prescriptions, or missed doses.

With **MediCare Pharmacy CRM**, the process becomes fully digital. Dr. Smith creates the prescription directly in Salesforce, linking it to John's patient record. The prescription is instantly accessible to both John and the pharmacy. John can view his prescription on the patient portal and is automatically reminded about the medication schedule through SMS and email notifications.

A few days later, John needs a refill. Instead of calling or visiting the pharmacy, he submits a refill request through the portal. The CRM system routes this request to Dr. Smith for approval. Once approved, the pharmacist receives a task in Salesforce to prepare the medication. The system automatically updates the inventory, reducing stock levels and alerting the pharmacist if stock is running low.

Throughout the week, John logs each dose he takes in the portal. The system calculates adherence in real-time. When John misses a dose, the system notifies Dr. Smith so he can follow up. Simultaneously, dashboards provide insights to the pharmacist on medication stock and to administrators on overall workflow efficiency and compliance.

By integrating with telemedicine platforms, the system ensures prescriptions from online consultations are also captured seamlessly. The SMS gateway sends timely reminders to patients, and the pharmacy inventory API maintains accurate, real-time stock levels.

This end-to-end scenario demonstrates how **MediCare Pharmacy CRM** transforms prescription management. Patients never miss doses, doctors can monitor treatment adherence, pharmacists optimize inventory, and healthcare administrators gain complete visibility over operations. The system not only streamlines processes but also enhances patient outcomes and ensures compliance with healthcare regulations.