Project Proposal: Lincoln Health Supply Pharmacy Prescription Management MVP

Project Title

Lincoln Health Supply Pharmacy Prescription Management MVP: Streamlining Patient Prescription Transfers and Requests

Client Information

Lincoln Health Supply
301 E Las Olas Blvd Suite 210
Fort Lauderdale, FL 33301

Prepared By

Alex Khanukov
AviKaiDo LLC
3233 NE 32nd Ave, #301
Fort Lauderdale, FL 33308

Date

9/6/2024

---

1. Project Summary

This proposal outlines the development of an MVP (Minimum Viable Product) for a web-based pharmacy prescription management system. The system will allow pharmacies to streamline the process of gathering patient information, transferring prescriptions, and managing communication with physicians. Patients will be able to submit prescription requests through a dynamic, easy-to-use online form that integrates with QR code marketing. Pharmacies will have access to a portal where they can view requests, track the status of prescriptions, and ensure that communications with doctors, via fax, are successfully handled.

The MVP focuses on delivering essential functionality quickly and cost-effectively, with room for future iterations and enhancements.

Key Features:

- **Pharmacy Authentication and Portal:**
  - Secure login for pharmacies
  - Dashboard showing the status of patient prescription requests
  - Ability to track, resend faxes, and view completed prescriptions
- **Patient Form:**
  - Dynamic form generation based on top 200 prescriptions and qualifying questions (4-6 each on average)
  - Integration with a database of doctors, practice info and their fax numbers
  - Submission of form data to generate and send fax requests to doctors via a printable template resembling a prescription
- **QR Code and URL Generation:**
  - Automatic generation of QR codes/URLs for each pharmacy's marketing needs
  - Unique URLs tied to QR codes for patient access to the online form
- **Fax Integration:**
  - Integration with a third-party API (Twilio Fax/Phaxio or current service used if possible) to send prescription requests
  - Error tracking and status updates on fax success or failure
- **Database and Infrastructure Setup:**
  - Database schema design and implementation to store patients, prescriptions, doctors, and request statuses
  - Cloud infrastructure setup for hosting and scalability

Technologies and Frameworks:

- **Backend:** Node.js with Express.js (or Python/Django)
- **Frontend:** React.js (or Vue.js)
- **Database:** PostgreSQL/MySQL
- **Cloud Services:** AWS, GCP, or Azure for hosting and infrastructure
- **Third-Party Integrations:** Twilio or Phaxio for faxing services, open-source libraries for QR code generation and PDF creation

---

2. Project Scope and Detailed Estimates

This section provides a detailed breakdown of the project's scope, including estimated hours for each component, to help in understanding the effort required for the MVP development.

2.1 Backend Development (Simplified for MVP)

1. **User Authentication & Authorization**
   - Implement simple session-based authentication for pharmacies.

- **Estimated Time: 10-15 hours**

2. **Dynamic Prescription Form Generation**
   - Create a basic form generation system for the top 200 prescriptions, mapping qualifying questions without extensive customization.
   - **Estimated Time: 15-20 hours**
3. **Prescription Requests and Status Tracking**
   - Develop the core request flow, including form submission, fax sending, and basic status updates without advanced features.
   - **Estimated Time: 15-20 hours**
4. **Fax Integration**
   - Integrate with a single fax API (e.g., Twilio Fax) without advanced error handling.
   - **Estimated Time: 10-15 hours**
5. **QR Code and URL Generation**
   - Implement basic QR code generation using open-source libraries, with URLs pointing to pre-generated forms.
   - **Estimated Time: 5-10 hours**
6. **PDF Generation (Prescription Template)**
   - Create basic PDF templates for prescriptions without extensive customization.
   - **Estimated Time: 10-15 hours**
7. **Database Design & Implementation**
   - Design a simplified database schema suitable for the MVP.
   - **Estimated Time: 10-15 hours**
8. **API Development for Pharmacy Portal**
   - Develop lightweight APIs to handle request tracking and basic portal functionalities.
   - **Estimated Time: 10-15 hours**

Total Estimated Time for Backend Development: 85-115 hours

2.2 Front-End Development (Simplified for MVP)

1. **Patient Form**
   - Develop a basic patient form with static options for prescriptions and qualifying questions.
   - **Estimated Time: 15-20 hours**
2. **Pharmacy Portal**
   - Build a simplified portal focusing on essential features like viewing requests and fax statuses.
   - **Estimated Time: 20-25 hours**
3. **Responsive UI & Design**
   - Use a pre-built UI framework (like Bootstrap) for basic responsiveness across devices.
   - **Estimated Time: 10-15 hours**

4. **Form Validation and Error Handling**
    - Implement basic form validation without advanced error handling.
    - **Estimated Time: 5-10 hours**

Total Estimated Time for Front-End Development: 50-70 hours

2.3 Infrastructure Setup (Simplified for MVP)

1. **Cloud Infrastructure Setup**
    - Set up basic cloud infrastructure focusing on cost efficiency without complex scaling.
    - **Estimated Time: 15-20 hours**
2. **CI/CD Pipeline**
    - Utilize minimal automation for testing and deployment, possibly using free-tier options.
    - **Estimated Time: 10-15 hours**
3. **Security and Compliance (Simplified)**
    - Implement basic SSL and encryption measures, with minimal initial HIPAA compliance features.
    - **Estimated Time: 10-15 hours**

Total Estimated Time for Infrastructure Setup: 35-50 hours

2.4 Testing & QA (Simplified for MVP)

1. **Unit Testing**
    - Conduct basic unit tests for core functionalities.
    - **Estimated Time: 15-20 hours**
2. **Integration Testing**
    - Test core integrations such as form submission to fax sending and status updates.
    - **Estimated Time: 10-15 hours**
3. **User Acceptance Testing (UAT)**
    - Perform UAT with a small group to gather quick feedback and make minimal revisions.
    - **Estimated Time: 10-15 hours**

Total Estimated Time for Testing & QA: 35-50 hours

2.5 R&D, Strategy & Miscellaneous

1. **Research and Development**
    - Limit research time by leveraging existing knowledge and focusing on essential integrations.
    - **Estimated Time: 20-25 hours**
2. **Project Planning & Design**
    - Simplify planning by focusing on core features and essential functionalities.
    - **Estimated Time: 15-20 hours**

Total Estimated Time for R&D and Strategy: 35-45 hours

2.6 Total Estimated Time for MVP Development

- **Backend Development: 85-115 hours**
- **Front-End Development: 50-70 hours**
- **Infrastructure Setup: 35-50 hours**
- **Testing & QA: 35-50 hours**
- **R&D and Strategy: 35-45 hours**

Overall Total Estimated Time: 240-330 hours

This translates to approximately **6-8 weeks** of full-time work (assuming a 2 person 20-hour workweek).

---

3. Potential Risks and Mitigations

Every project carries inherent risks. The following are potential risks and suggested mitigation strategies:

1. **Scope Creep:**
   Risk: The client may request additional features or significant changes mid-development.
   Mitigation: Clear scope definition at the beginning of the project and adherence to agreed-upon MVP functionality. Changes will be documented and subject to separate negotiation (see change management).
2. **Timeline Delays:**
   Risk: Unforeseen technical challenges or integration difficulties with third-party services.
   Mitigation: Regular progress updates to ensure early detection of delays. Buffer time is built into the schedule to accommodate potential setbacks.
3. **Third-Party Service Failures (e.g., Fax API):**
   Risk: Dependence on external APIs for faxing services, which may experience downtime

or failures.
Mitigation: Implement error tracking and basic retry mechanisms. Research alternative providers as backups.

4. **Data Security (HIPAA Compliance):**
Risk: Handling sensitive patient data requires adherence to data security standards (especially HIPAA).
Mitigation: Ensure encryption of sensitive data, SSL certificates, and secure data storage. For MVP, HIPAA-compliance measures will be basic, with plans for enhancement in later versions.

---

4. Change Management (Scope Creep)

To ensure the project stays within the agreed-upon scope and timeline, the following change management process will be used:

- **Initial Scope:** The scope detailed in this proposal reflects the agreed-upon features and deliverables for the MVP.
- **Change Requests:** Any additional feature requests or significant changes to existing features during development will require a formal change request.
- **Cost and Time Impact:** Each change request will be evaluated for its impact on the budget and timeline. If accepted, the project timeline and cost will be adjusted accordingly and documented in writing.
- **Client Approval:** No changes will be made without prior client approval.

---

5. Assumptions and Constraints

- **Assumptions:**
    - The client will provide timely feedback and approvals during key project phases (e.g., design, testing).
    - The client has access to required third-party services (e.g., Twilio Fax or Phaxio) and is responsible for costs associated with them.
    - Any data (prescription list, doctor list, etc.) will be provided by the client in a timely manner.
- **Constraints:**
    - The MVP is designed to be a functional prototype. More advanced features, such as retry logic for failed faxes or complex data analytics, will be considered in future iterations.

---

6. Cost Estimates for Services and Infrastructure (MVP)

The Client will cover infrastructure and operating costs. Estimates to understand ongoing costs:

a. Cloud Hosting (MVP):

- **Compute Instances:** Use smaller cloud instances or shared hosting for initial deployment.
  - **Estimated Cost: $30-$100/month**
- **Database:** Use a smaller managed database (e.g., RDS with fewer resources or a shared database).
  - **Estimated Cost: $20-$50/month**
- **Storage (for PDFs and logs):** Minimal storage needs initially.
  - **Estimated Cost: $10-$20/month**
- **Estimated Cloud Costs for MVP: $60-$170/month**

b. Faxing Service:

- **Same as before:** $50-$100/month based on expected usage (1,000 faxes).

c. QR Code Generation:

- Use an open-source library (no additional cost).

d. Security & Compliance:

- Use a basic SSL certificate (likely available for free through services like **Let's Encrypt**).
  - **Estimated Cost: $0-$100/year** (depending on SSL provider)

e. Other Services (Optional):

- **CI/CD Tools:** Use free-tier options or reduce to manual deployments for now.
  - **Estimated Cost: $0-$30/month**

Total Estimated Monthly Running Costs for MVP:

- **Cloud Hosting & Infrastructure: $60-$170**
- **Faxing Service: $50-$100**
- **SSL & Security: $0-$100/year** (roughly **$0-$10/month**)
- **Miscellaneous: $0-$30**

Estimated Monthly Costs (for MVP): $110-$300/month
