

# Smart BioTech LAB

## Phase 1: Problem Understanding & Industry Analysis

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### 1. Requirement Gathering

**Goal:** Understand what each stakeholder (patients, doctors, lab managers, hospital partners) needs from the CRM.

- **Patients:** Easy registration, view booked tests, check insurance status, download reports.
- **Doctors:** Ability to request genetic tests, review results, approve reports.
- **Lab Managers / Technicians:** Track samples, manage lab workflows, assign technicians, monitor turnaround time.
- **Hospital Partners:** Refer patients, view referral outcomes, track invoices & reports.
- **Admin / Management:** Dashboards for revenue, efficiency, and compliance tracking.
- **Integration Needs:** Insurance verification, lab equipment data import, patient portal & partner portal.

### 2. Stakeholder Analysis

#### Primary Stakeholders:

- **Patients** → Register, book tests, access reports.
- **Doctors** → Request tests, validate medical reports.
- **Lab Managers** → Supervise lab operations, manage samples and technicians.
- **Hospital Partners** → Refer patients, track partnership deals.

#### Secondary Stakeholders:

- **Salesforce Admins** → Configure, customize, automate workflows.
- **Insurance Providers** → Validate test coverage for patients.
- **Regulatory Authorities** → ensure compliance and data protection.

### 3. Business Process Mapping

- **Current Process (Manual):**
  - Patient test requests are managed via calls, forms, or emails.
  - Sample tracking is manual, leading to delays or errors.
  - Reports are emailed to doctors without centralized tracking.
  - Insurance verification is slow and manual.
  - Hospital referrals and billing are tracked in spreadsheets.
- **Proposed Process (with Salesforce CRM):**
  - Patients and doctors use portals to request and book **Genetic Tests**.
  - Automated creation of **Sample\_\_c** records linked to tests.
  - Insurance verification integrated in workflows.
  - Reports move through a defined lifecycle (Draft → Reviewed → Finalized → Released).
  - Dashboards show test volumes, turnaround times, and revenue.
  - Partner portal manages hospital referrals and shared reports.

### 4. Industry-Specific Use Case Analysis

- **Genetic Data Security:** Data requires HIPAA/GDPR compliance → handled with encryption, role-based access, and audit logs.
- **Sample Tracking Errors:** Risk of mislabeled/missing samples → solved by Salesforce **Sample\_\_c** object with barcode/QR integration.
- **Insurance Delays:** Manual approvals slow down patients → automated workflows to update `Insurance_Status__c` in **Genetic\_Test\_\_c**.
- **Report Turnaround:** Slow coordination between labs and doctors → approval workflow + instant patient notifications.
- **Hospital Coordination:** Referrals managed in spreadsheets → Salesforce **Hospital\_Partner\_\_c** with Partner Portal access

## 5. AppExchange Exploration

- **Communication:** SMS/Email apps (Twilio, SMS-Magic) for patient/test notifications.
- **Document Management:** Apps for storing secure test reports.
- **Payments & Insurance:** Razorpay/Stripe connectors for test billing.
- **Compliance:** Healthcare cloud apps for HIPAA/GDPR compliance and auditing.
- **Future Scope:** AI & IoT integration with genetic testing machines.

### Decision:

- Use custom objects: **Patient\_\_c, Doctor\_\_c, Genetic\_Test\_\_c, Sample\_\_c, Report\_\_c, Hospital\_Partner\_\_c.**
- Integrate with AppExchange apps for communication and payments.
- Implement Salesforce Flows for automation (approvals, reminders, notifications).