

Business Requirements Document (BRD)

Project: Chroniq RFM Healthcare segmentation

1. Project Objective

To build a data-driven decision support system that identifies chronic disease patients at risk of readmission or unmanaged care.

The solution will use RFM (Recency, Frequency, Monetary) segmentation on patient visit and cost data to enable proactive interventions and reduce long-term care costs.

2. Business Goals

- Improve early detection of chronic care deterioration through behavioral segmentation.
- Reduce preventable readmissions and associated costs.
- Empower doctors and administrators with real-time patient insights.
- Enable exportable reports for operations, clinical, and finance teams.
- Enhance efficiency by replacing manual data review with smart dashboards.

3. Stakeholders

- Hospital Admin: Strategic planning, compliance, cost control.
- Clinical Team: Day-to-day care management and intervention.
- Operations Team: Patient flow optimization, scheduling, follow-up.
- Finance: Cost allocation, insurance coverage insights.
- Data Team: Backend logic, data validation, dashboard development.

4. Business Use Cases

- UC1: Admin wants to view the percentage of patients currently at high risk.
- UC2: Doctor needs to drill into a patient's past visits and vitals instantly.
- UC3: Finance team wants to export a list of patients with >\$10,000 spend.
- UC4: Analyst wants to explore demographic trends among chronic patients.
- UC5: Operations manager wants to track follow-up compliance by region.

5. Current Pain Points

- Manual segmentation leads to delayed patient follow-ups.
- No system to track recency of visits and cost-risk in one place.
- High-risk patients are discovered after acute episodes.

- Clinical teams lack tools for data-driven patient targeting.

6. Solution Scope

IN SCOPE

- Build RFM model using visit date, visit frequency, and expenditure.
- Segment patients into High, Medium, Low risk groups.
- Visualize patient KPIs in a Power BI dashboard.
- Enable drill-down by demographics, geography, and insurance.
- Export functionality for filtered views.

OUT OF SCOPE

- Live EMR/EHR system integration.
- Real-time streaming updates.
- ML-based predictive modeling (future phase).

7. Success Criteria

- High-Risk patients correctly flagged.
- Filter Sync Accuracy.
- User acceptance test scenarios passed.
- Time to retrieve the patient profile.
- Exportable ad hoc reports available.

8. Assumptions & Constraints

- Data is pulled from simulated .csv files (patients, visits, vitals).
- Age inconsistencies (e.g., -1) are cleaned programmatically.
- Static snapshots used; real-time pipelines are not in scope.
- Stakeholders will have access to Power BI Service or Desktop.

9. Deliverables Tied to BRD

- BRD (this doc): Business alignment and goal definition.
- FRD: Functional design based on BRD logic.
- RFM Score Sheet: Logic used to segment patients.
- Power BI Dashboard (.pbix): Full 4-page interactive analytics solution.
- UAT Tracker: Real-world scenario test coverage.
- QA Sheet: Technical logic validation log.