Business Requirement Document (BRD)

1. Project Overview

The 340B Program Dashboard is designed to provide insights into drug utilization, patient demographics, financial savings, adverse events, and location-based performance under the 340B program. This dashboard enables stakeholders to make data-driven decisions by offering a comprehensive view of the program's impact.

2. Objectives

- Provide detailed insights into cost savings and drug pricing under the 340B program.
- Monitor drug utilization and inventory management trends.
- Analyze patient demographics and program accessibility.
- Track adverse events and drug outcomes for safety monitoring.
- Evaluate performance by location to identify high-performing regions.
- Visualize purchase trends over time to optimize inventory and budgeting.

3. Functional Requirements

The dashboard should include the following functionalities:

1. Financial Impact Analysis:

- Display total savings, savings percentage, and total purchased value.
- Compare regular prices and purchase prices by drug or category.

2. Drug Utilization:

- Show quantities purchased and dispensed.
- Calculate and visualize utilization rates.

3. Patient Demographics:

- Analyze eligible patient count, age distribution, gender distribution, and insurance status.

4. Adverse Events Monitoring:

- Track total adverse events and calculate adverse event rates per drug.

5. Location-Based Performance:

- Display dispensing data and savings by location using maps and charts.

6. Purchase Trends:

- Visualize monthly and quarterly trends for purchases and dispensation.

4. Data Requirements

The dataset includes the following fields:

- Entity Information: entity_id, entity_type
- Drug Details: drug_id, drug_name, drug_category, dosage, package_size
- Pricing: purchase_price, regular_price, savings
- Quantities: quantity_purchased, quantity_dispensed
- Patient Information: eligible_patient_count, patient_age, patient_gender, insurance_status
- Adverse Events: adverse_events, outcome
- Location: location
- Dates: purchase_date, dispensing_date

The data is generated programmatically using Python libraries Faker and Pandas, ensuring realistic trends for analysis.

5. Key Performance Indicators (KPIs)

- Financial Impact:
  - Total Savings

  - Savings Percentage
  - Total Purchased Value

- Drug Utilization:
  - Quantity Purchased
  - Quantity Dispensed
  - Utilization Rate

- Patient Demographics:
  - Eligible Patient Count
  - Patient Age and Gender Distribution
  - Insurance Status

- Adverse Events:
  - Total Adverse Events
  - Adverse Event Rate

- Location-Based Performance:
  - Quantity Dispensed by Location
  - Savings by Location

- Purchase Trends:
  - Monthly and Quarterly Purchase Trends
  - Purchase to Dispense Lead Time

6. Visualization Requirements

The dashboard includes the following visualizations:

- Bar Charts: Compare savings, quantities, and adverse events by drug or category.

- Line Charts: Track trends over time.

- Pie Charts: Show demographic distributions.

- Stacked Bar Charts: Visualize comparisons (e.g., purchase vs dispensed quantities).

- Maps: Display location-based performance.

- Tree Maps: Show hierarchical data such as drug categories.

7. Stakeholder Benefits

- Enables data-driven decision-making.

- Improves drug utilization efficiency.

- Enhances patient access monitoring.

- Tracks financial savings and program cost-effectiveness.

- Monitors safety through adverse event analysis.

- Identifies high-performing locations and trends.