Power BI Case Study: Bond Hospital

About Bond Hospital

Bond Hospital is a well-respected institution in its community. However, the leadership team recognized a growing need to leverage data for better decision-making. Traditionally, financial and operational decisions were made based on intuition and historical trends, which left room for inefficiencies and missed opportunities.

Problem Statement

Bond Hospital lacked a centralized view of their financial performance. This made it difficult to identify trends, optimize resource allocation, and make data-driven decisions. As a Data Analyst, the task was to analyze raw hospital transaction data and present a bird's-eye-view dashboard for management using Power BI, enabling leadership to draw insights and make data-driven decisions.

Steps Taken

1. Data Modeling – Defined relationships between patients, doctors, specialties, and transactions.

2. Data Cleaning & Integration – Identified and corrected missing values, inconsistencies, and duplicates.

3. DAX Calculations – Created measures for revenue, expenses, profit, and profit margin.

4. Dashboard Development – Built two dashboards: Financial & Operational Overview, and Performance Insights.

Data Dictionary

- TransactionID – Unique identifier for each hospital transaction.
- Date – Date of the transaction.
- RevenueAmount – The amount of revenue generated by the transaction.
- ExpensesAmount – The amount of expenses incurred for the transaction.
- Doctors_FirstName / Doctors_LastName – Doctor's name.
- Doctor_Gender – Doctor's gender.
- Specialty – Doctor's medical specialty.
- PatientID – Unique identifier for each patient.
- Patients_FirstName / Patients_LastName – Patient's name.
- Patients_Gender – Patient's gender.
- ProcedureName – Name of the medical procedure performed.
- Category – Category of the medical procedure (e.g., Surgery, Radiology).
- LocationID – Unique identifier for the hospital location.
- Country, City, State, PostalCode – Location details of the hospital.

Dashboard 1: Financial & Operational Overview

Key Metrics:

- Total Revenue: $274K

- Total Expenses: $189K

- Profit: $84K (Profit Margin: 31%)

- Doctors: 81, Patients: 86

Tailored Analysis:

- Revenue trend over time.

- Highest & lowest revenue by specialties.

- Revenue contribution by procedure category.

- Procedure-level breakdown of revenue, expenses, profit margin, and transactions.

Dashboard 2: Performance Insights

Key Metrics & Analysis:

- Top revenue-generating doctors (e.g., Dr. Ava Adams with $25K).

- Top 5 patients impacting revenue (e.g., Harper Y. with $17K).

- Number of doctors per specialty and patients per specialty.

- Patient visit trends (quarterly and daily peaks).

- Gender-based distribution of doctors and patients.

Key Insights

- Dermatology ($68K), Cardiology ($61K), and Neurology ($59K) were top revenue specialties.

- Heart Bypass Surgery generated $31K with a 31.9% margin.

- Pediatric Vaccinations contributed $34K revenue, showing preventive care impact.

- Seasonal and time-of-day patient visit trends revealed peaks useful for resource planning.

Recommendations

1. Invest in high-performing specialties such as Dermatology and Cardiology.

2. Leverage preventive care services like vaccinations for revenue and trust building.

3. Plan staffing and resources around seasonal and daily patient visit peaks.

4. Recognize top-performing doctors and support underperforming areas.

Conclusion

This project highlighted that data alone doesn't create value — insights do. With Power BI, Bond Hospital now has a centralized, interactive dashboard that consolidates finance, operations, and people data. This enables leadership to move beyond intuition to make faster, smarter, and data-driven decisions.