🏥Hospital Emergency Room Performance Dashboard (Power BI)

Project Overview

This project presents an **end-to-end Power BI dashboard** designed to analyze and monitor **hospital emergency room (ER) operations**. The dashboard helps **leadership and operations teams** understand patient flow, wait times, satisfaction levels, referrals, admissions, and demographic patterns to support **data-driven decision-making**.

The analysis covers **19 months of data (April 2023 – October 2024)** with **9,216 unique patient records**.

🚢Business Problem

Emergency rooms face challenges such as: - Long patient wait times - Uneven patient load across days and hours - Resource allocation issues - Limited visibility into referral and admission patterns

This dashboard addresses these problems by providing **clear KPIs, trends, and drill-down capabilities** in a single interactive reporting solution.

🏫Dashboard Pages & Features

Executive / Monthly View

- High-level KPIs: Total Patients, Avg Wait Time, Avg Satisfaction Score
- Patient volume trends by month
- Admission vs Treat-and-Release overview
- Designed for **quick leadership insights**

Consolidated / Operations View

- Patient distribution by day of week and hour
- Department referral analysis
- Identification of **peak load periods** for staffing optimization

Patient Details (Raw Records)

- Patient-level tabular view
- Supports operational audits and deep-dive analysis
- Synced filters across report pages

Key Takeaways

- Narrative insights summarizing major findings
- Business-focused interpretation of trends

- Bridges the gap between data and action

Key Insights

- Average patient wait time is approximately **35 minutes**, indicating scope for process improvement
- **Patient satisfaction score averages ~5/10**, highlighting experience gaps
- **Mondays and late evening hours** are the busiest periods
- **General Practice and Orthopedics** are the most common referral departments
- Nearly equal split between **admitted** and **treated & released** patients

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Tools & Technologies

- **Power BI Desktop** – Dashboard development
- **DAX** – Measures, KPIs, and time intelligence
- **Power Query** – Data cleaning and transformation
- **Data Modeling** – Star schema with fact and dimension tables
- **Custom Date Table** – Month, year, weekday, and trend analysis

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Power BI Best Practices Used

- User-centric dashboard design (Executive vs Operations view)
- Consistent color theme and layout
- Interactive slicers and cross-filtering
- Drill-through navigation for detailed analysis
- Narrative storytelling using Key Takeaways

🏫Screenshots Included

(See `/screenshots` folder)

- `01_Executive_View.png` – KPI and high-level summary page
- `02_Consolidated_View.png` – Operational trends and distributions
- `03_Patient_Details.png` – Raw patient-level data view
- `04_Key_Takeaways.png` – Narrative insights page

Repository Structure

```
ER-PowerBI-Dashboard/
│
├── screenshots/
│   ├── 01_Executive_View.png
```

```
│   ├── 02_Consolidated_View.png
│   ├── 03_Patient_Details.png
│   └── 04_Key_Takeaways.png
│
├── README.md
└── ER_Project.pbix (optional / on request)
```

Intended Audience

- Power BI Recruiters & Hiring Managers
- Data Analytics Interviewers
- Healthcare Analytics Teams

🚀Resume-Ready Description

Built an interactive **Power BI dashboard** analyzing emergency room operations across **9,216 patients**, delivering insights on **patient flow, wait times, satisfaction, referrals, peak hours, and admission patterns** using **DAX, time intelligence, and data modeling**.

🚎Notes

- Dataset used is anonymized / sample data
- `.pbix` file can be shared upon request

⭐ *If you find this project insightful, feel free to explore the screenshots or reach out for collaboration opportunities.*