

Hospital Emergency Room Analysis Dashboard Using Excel

Executive Summary:

The Hospital Emergency Room Dashboard is an interactive Excel-based analytical solution designed to monitor and evaluate emergency room performance metrics on a monthly basis. The dashboard provides a comprehensive overview of patient flow, waiting time, admission trends, demographic distribution, and departmental workload to support data-driven decision-making.

The dashboard enables dynamic year selection (2023 and 2024) and month-wise filtering, allowing users to analyze trends efficiently. Key performance indicators (KPIs) such as Total Patients (464), Average Waiting Time (34.72 minutes), and Patient Satisfaction Rate (4.99) are prominently displayed to give a quick performance snapshot.

Key Insights Generated:

- **Timeliness of Service:**
58% of patients were attended on time, while 42% experienced delays, highlighting opportunities for operational improvement.
- **Admission Analysis:**
50.86% of patients were admitted, while 49.14% were not admitted, showing a balanced distribution between emergency treatment and discharge cases.
- **Gender Distribution:**
Patient count is nearly evenly split between male and female patients, ensuring demographic balance analysis.
- **Age Group Trends:**
The highest patient visits fall within the **20–29 age group**, followed closely by middle-aged groups, indicating higher emergency utilization among young adults and working-age individuals.
- **Departmental Load:**
The majority of cases fall under general or non-specialized emergency services, while Orthopedics and General Practice also handle significant volumes. Specialized departments like Cardiology, Neurology, and Renal have comparatively lower but critical case counts.

Tools & Techniques Used:

- Pivot Tables & Pivot Charts
- Conditional Formatting
- KPI Cards with Sparklines
- Data Validation (Month & Year Slicers)
- Interactive Visualizations (Bar Charts, Pie Charts, Donut Charts)

- Percentage Calculations & Dynamic Formulas

Project Impact:

This dashboard improves hospital management visibility by:

- Identifying peak patient age groups
- Monitoring service delays
- Tracking departmental workload
- Evaluating patient satisfaction
- Supporting strategic staffing and resource allocation

Overall, the project demonstrates strong data visualization, Excel analytics, and dashboard design skills, making it a practical solution for healthcare performance monitoring.