HEALTHCARE DATA ANALYSIS SUMMARY

AGENDA

a. Objective

b. Dataset Overview

c. Key Findings (with charts from Excel)

d. Insights

e. Summary

OBJECTIVE

- To analyze the patient dataset and understand patterns in diagnosis, treatment, and outcomes.
- To identify key trends in department workload, treatment costs, and patient recovery.
- To support data-driven decision-making for improving healthcare service quality.
- To clean and prepare raw healthcare data for accurate analysis (handling missing values, fixing dates, removing duplicates).
- To summarize actionable insights based on meaningful patterns found in the dataset.

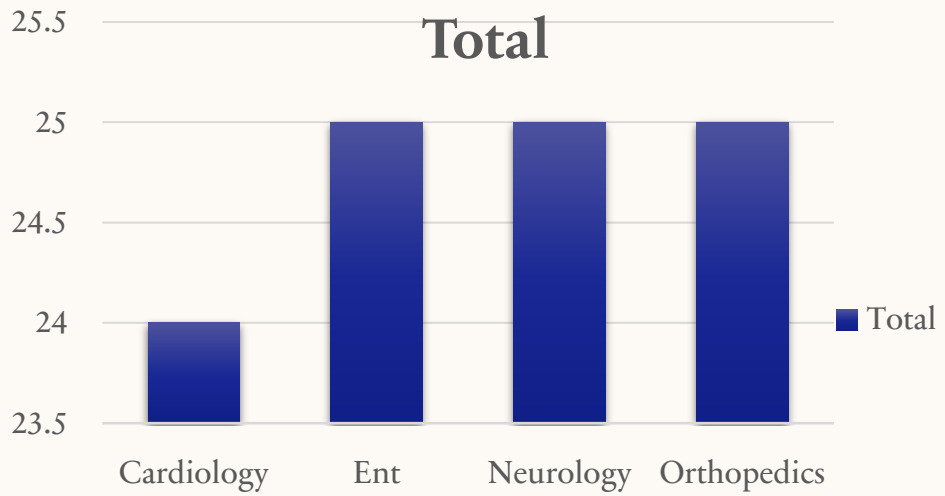
DATASET OVERVIEW

- Total Records: 99
- Columns: Patient ID, Department, Age, Gender, Diagnosis with result, Admission Date, Discharge Date, Treatment Cost, Outcome,Length Of Stay

KEY FINDINGS (WITH CHARTS)

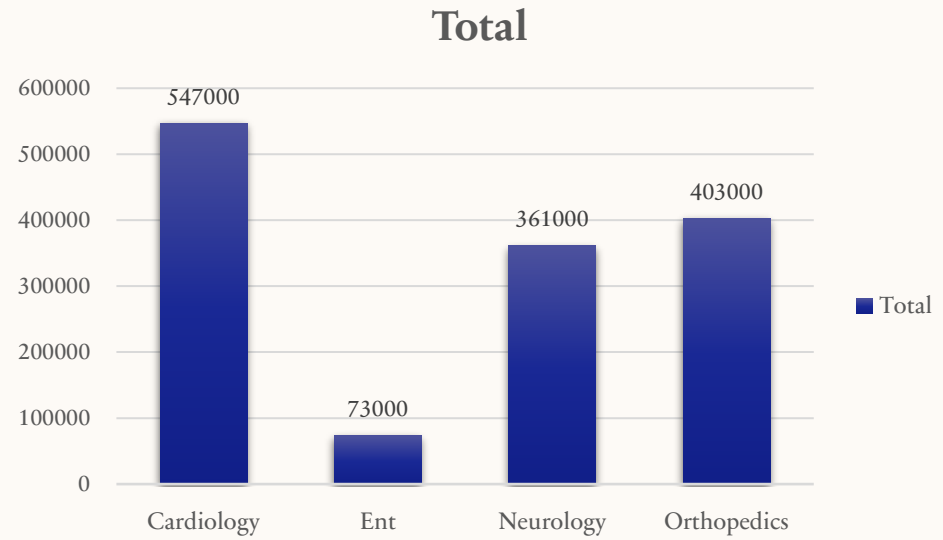
Department Distribution

Shows which departments handled the most patients
Helps identify demand & resource allocation
(Chart from Excel: Patients per Department)



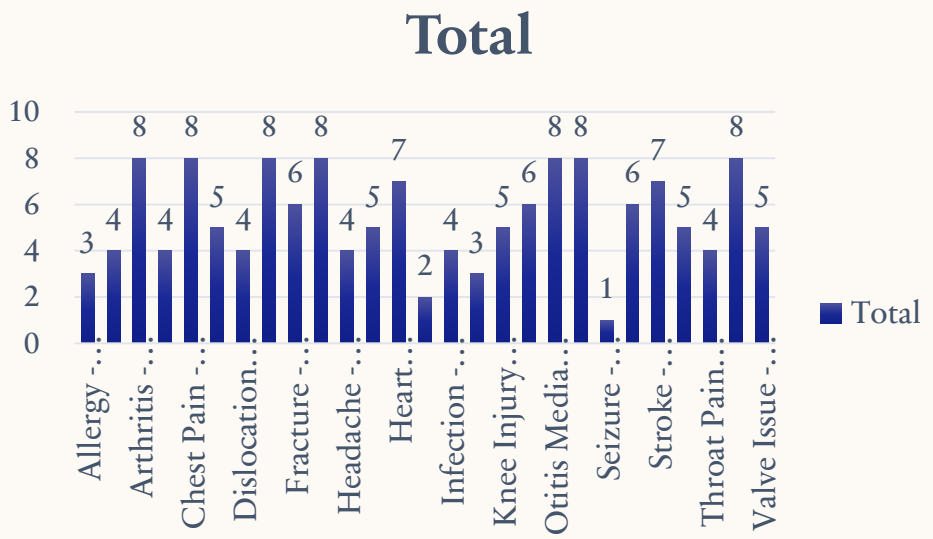
TOTAL TREATMENT COST PER DEPARTMENT

- **Cardiology** recorded the **highest total treatment cost** (₹547,000), indicating a higher volume of complex or long-duration treatments.
- **Orthopedics** and **Neurology** follow with ₹403,000 and ₹361,000 respectively.
- **ENT** had the **lowest treatment cost** (₹73,000), showing fewer or less expensive cases.
- Insight: Departments like Cardiology may require more budget allocation and specialist resources.



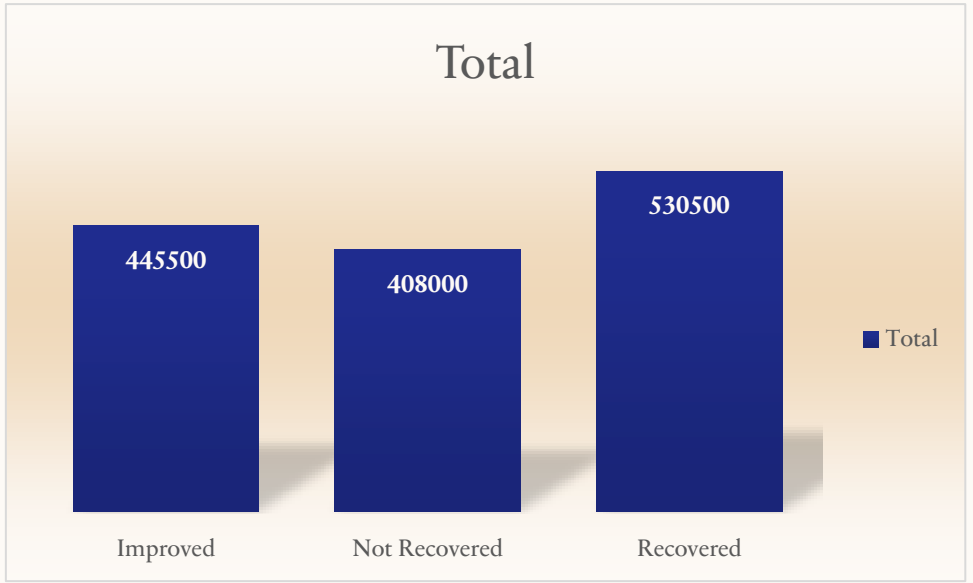
MOST COMMON DIAGNOSES

- Multiple conditions such as **Fracture – Healing**, **Back Pain – Improved**, **Hypertension – Stable**, and **Various Infections** appear frequently (6–8 cases each).
- The chart shows **many recurrent illnesses**, indicating common patient health issues across departments.
- Insight: Preventive care and early screening programs can reduce recurrence of common conditions.



TOTAL TREATMENT COST PER OUTCOME

- Patients who **Recovered** accounted for the **highest cost** (₹530,500).
- **Improved** patients cost a total of **₹445,500**, while **Not Recovered** accounted for **₹408,000**.
- Insight: Higher cost for recovered cases suggests successful long-duration treatments or costlier interventions leading to recovery.



INSIGHTS

The analysis reveals that departments with a higher patient load, particularly Cardiology and Neurology, may require additional staffing, equipment, and bed capacity to manage operational pressure more effectively. Differences in treatment costs across departments also highlight the need for standardized pricing guidelines to ensure cost transparency and consistency. While some departments show efficient processes with shorter diagnosis times, patients with chronic conditions—especially those handled by Cardiology—tend to require more time and closer monitoring. Clinical patterns also indicate that departments with a high number of “Improved” but fewer “Recovered” outcomes may benefit from strengthened follow-up and patient monitoring programs. From a data-quality perspective, issues such as missing age values and inconsistent date formats suggest the need for stricter data-entry protocols and standardized input templates. Based on these findings, hospitals should focus on improving patient scheduling to reduce departmental overload, implementing continuous staff training for accurate digital data entry, using real-time analytics dashboards for monitoring patient trends, and optimizing treatment costs by analyzing procedures that drive higher expenses.

SUMMARY

•Cleaned and standardized healthcare dataset for accurate insights.

•Identified major patient flow patterns across departments.

•Compared treatment costs and found significant cost variation.

•Analyzed outcomes showing strong recovery rates in most departments.

•Provided recommendations to improve operations, cost-efficiency, and data quality

OVERALL CONCLUSION:

- This analysis helps hospital administrators make informed decisions about workload distribution, pricing, patient care efficiency, and data management.

EXCEL DRIVE LINK:

- https://drive.google.com/drive/folders/1KW736cA8RpvucnTwun4Fycu_8iNbTrz_?usp=sharing

THANK YOU

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