

# Healthcare Data Analysis using Tableau

## Project Overview:

This project involved the analysis of healthcare data to explore key metrics such as the average length of stay (LOS), cost per discharge, and other critical hospital performance indicators. **Tableau** was used as the primary tool to visualize trends across multiple regions and hospital categories.

## Objective:

The primary goal of this analysis is to evaluate **hospital efficiency** by examining the relationship between **Length of Stay (LOS)** and **healthcare costs**. To explore the following insights:

- Factors influencing LOS and cost the most
- Hospitals which stand out as the biggest outliers
- Performance of different hospitals in New York State

## Dataset:

I have worked with a fictitious dataset of New York State hospitals.

Link to Dataset: [Patient Data](#)

Key data points included:

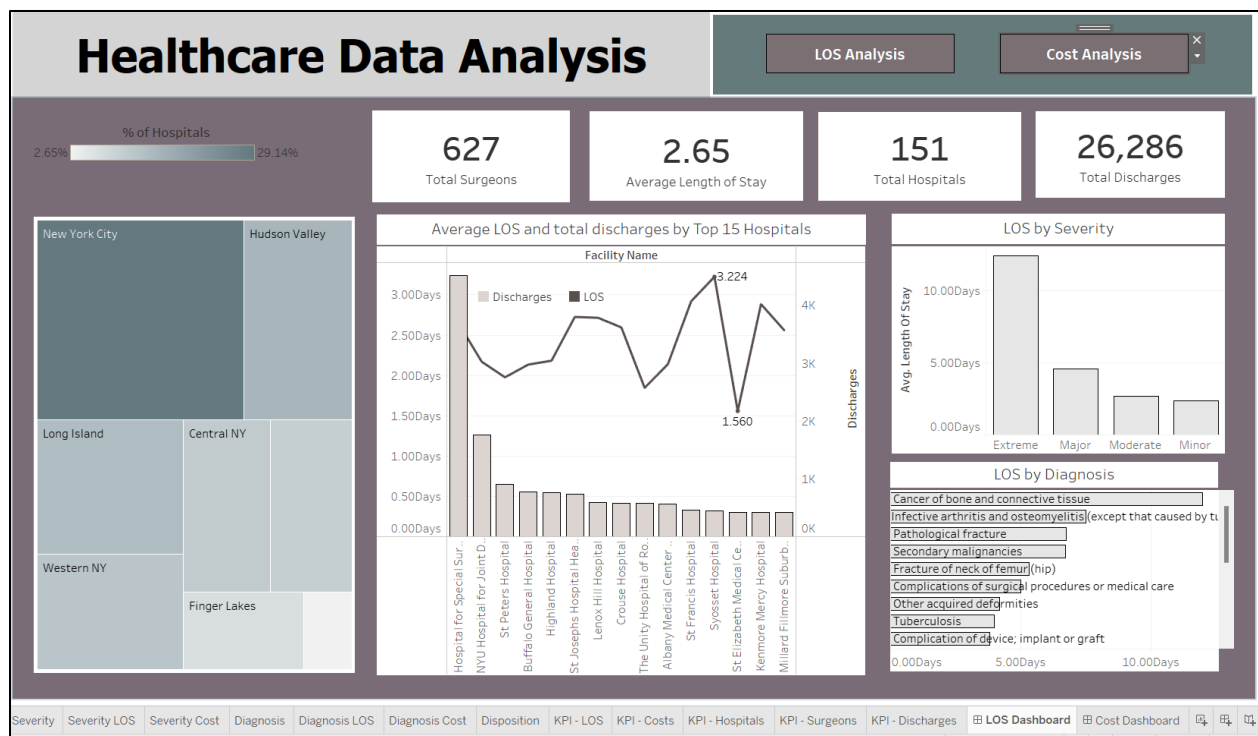
- Hospital Regions: New York City, Hudson Valley, Long Island, Western NY, etc.
- Average Cost Per Discharge
- Average Length of Stay (LOS)
- Total Hospitals and Discharges
- Severity of Cases (Extreme, Major, Moderate, Minor)
- Diagnosis Categories (e.g., Cancer of Bone and Connective Tissue, Secondary Malignancies, etc.)

## Dashboards Created:

Link to Tableau Dashboard: [Healthcare Analysis using Tableau](#)

### 1) LOS Analysis:

- **KPI Cards:** Total Surgeons, Average Length of Stay (LOS), Total Hospitals, Total Discharges
- **Visuals:** A Tree map displaying the number of hospitals in service areas, a dual combination chart illustrating the average length of stay (LOS) and discharges for the top 15 hospitals, and bar charts representing LOS by severity and diagnosis.



## Insights:

- Average LOS and Cost are high:
  - Severity of Illness is Extreme
  - The hospital is in New York City
  - Diagnosis is linked to bone cancer
- Out of hospitals in New York City, 5 facilities have an Average Cost Per Hospital exceeding the city's 90th percentile
- Among the top 15 hospitals with the highest discharge volumes, the longest average LOS is 3.44 days

## Business Impact & Recommendations:

- **Resource Allocation:** Allocate more specialized resources to handle extreme cases like bone cancer, improving patient outcomes and potentially reducing LOS
- **Cost Control:** Review of cost structures at hospitals exceeding the city's 90th percentile to find efficiencies and lower expenses
- **LOS Reduction:** Implement best practices or clinical pathways to reduce the longest average LOS of 3.44 days and improve discharge planning
- **Market Positioning:** Evaluate the hospitals' competitive advantage—if they offer specialized care, the high cost may be justified, but otherwise, consider cost-reduction strategies
- **Patient Care:** Develop specialized programs for bone cancer treatment and enhance post-discharge support to reduce readmissions and LOS

## Conclusion:

In conclusion, optimizing resource allocation, reducing Length of Stay, and controlling costs can significantly improve hospital efficiency and patient care. By focusing on specialized care for high-severity cases, enhancing discharge planning, and providing post-discharge support, hospitals can achieve better outcomes while lowering costs. Tableau can be used to visualize key metrics such as cost per hospital, LOS trends, and resource utilization, providing actionable insights for decision-making. These strategies will not only enhance financial performance but also strengthen the hospital's competitive position in the market.