

Project Report: Health Service Analysis

1. Data Source

<https://docs.google.com/spreadsheets/d/1b9fdIcJVSLFk5YraO89MmV4hia93q5gr/edit?usp=sharing&ouid=109750631865036459473&rtpof=true&sd=true>

2. Dataset Description

The dataset used for this analysis encompasses a comprehensive set of information related to the hospital's health services. It includes the following tables:

- **Admitted:** Records patient admissions with case numbers, admission dates, discharge dates, and patient IDs.
- **Departments:** Contains department numbers and names.
- **Employees:** Provides employee details, including employee IDs, first and last names, birthdates, gender, date of joining, and date of resignation (if applicable).
- **Patient General Details:** Encompasses patient information, such as patient IDs, first and last names, birthdates, gender, contact details, relative's contact, and address.
- **Patient Medical Conditions:** Contains patient IDs and their corresponding medical histories.
- **Treatments:** Includes treatment IDs, department numbers, treatment names, and associated fees.

3. Analysis using SQL

- **Basic statistics:**

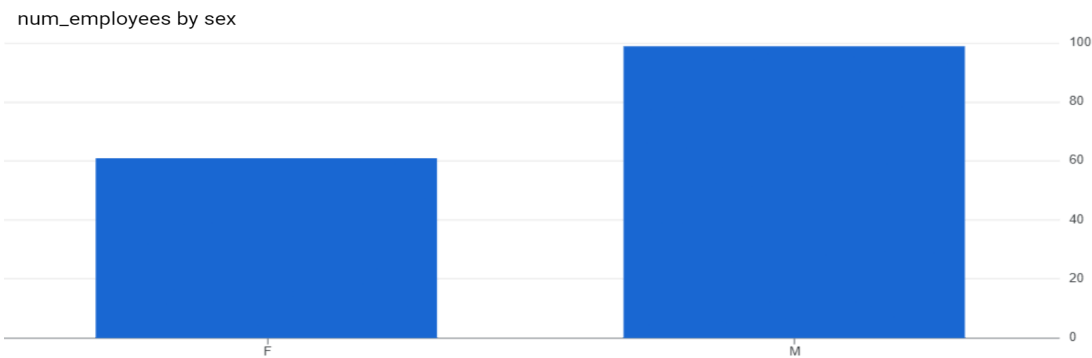
The dataset encompasses a comprehensive range of information related to health services:

- The dataset includes a total of [total_admissions] admissions, involving [total_employees] employees, across [total_departments] departments.
- The patient data is extensive, with records of [total_patients] unique patients and their corresponding medical conditions.

Total Admissions	Total Departments	Total Patients	Total Employees	Total Medical Conditions	Total Treatments
120	15	100	160	149	124

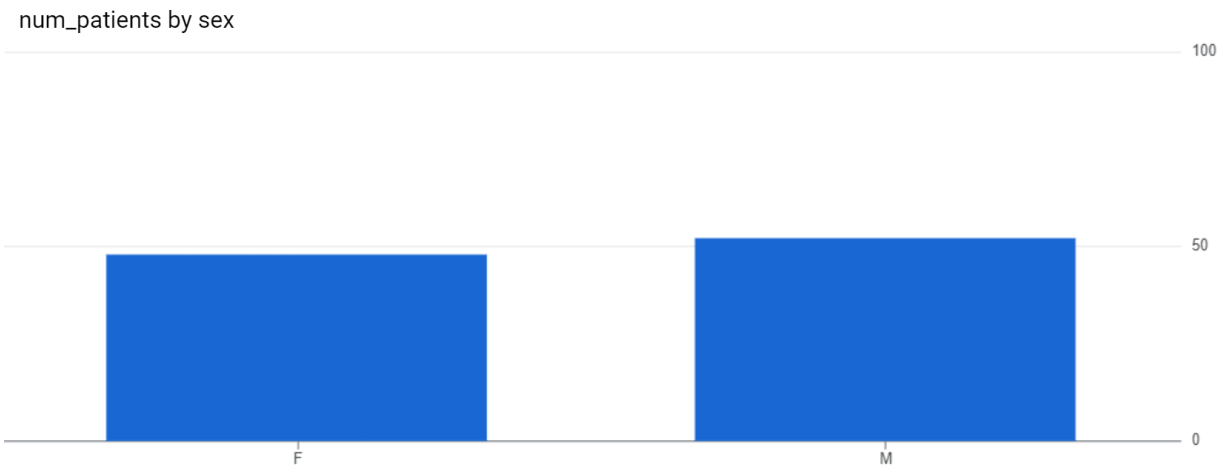
- **Employee Insights:**

Gender Distribution: The hospital's workforce comprises 160, categorized by gender. It is essential to ensure a balanced gender representation across departments to promote diversity and inclusivity.

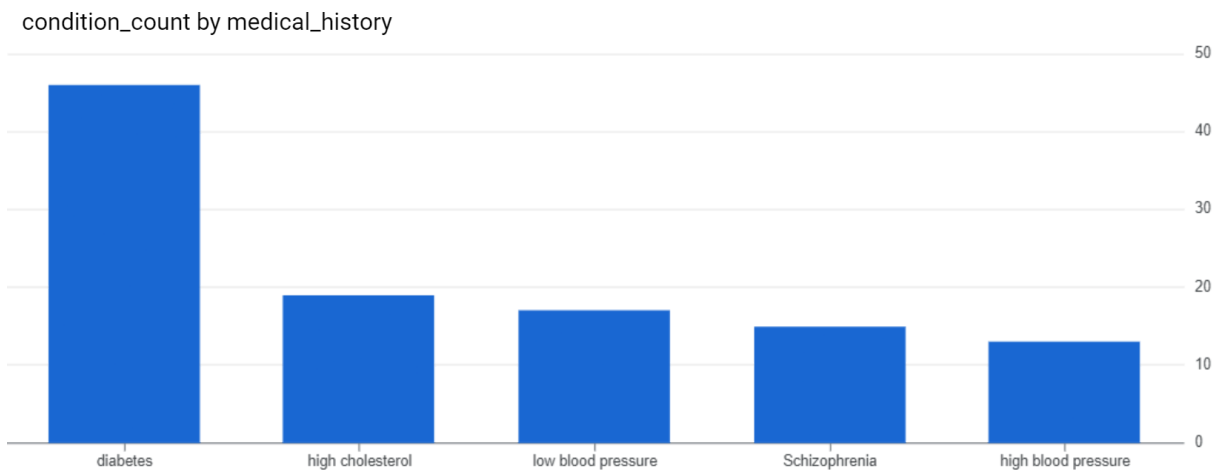


- **Patient Insights:**

1. Gender Distribution: The dataset highlights the gender distribution among 100 patients. Understanding the gender makeup of the patient population can influence tailored healthcare strategies. We can see the distribution is almost equal.

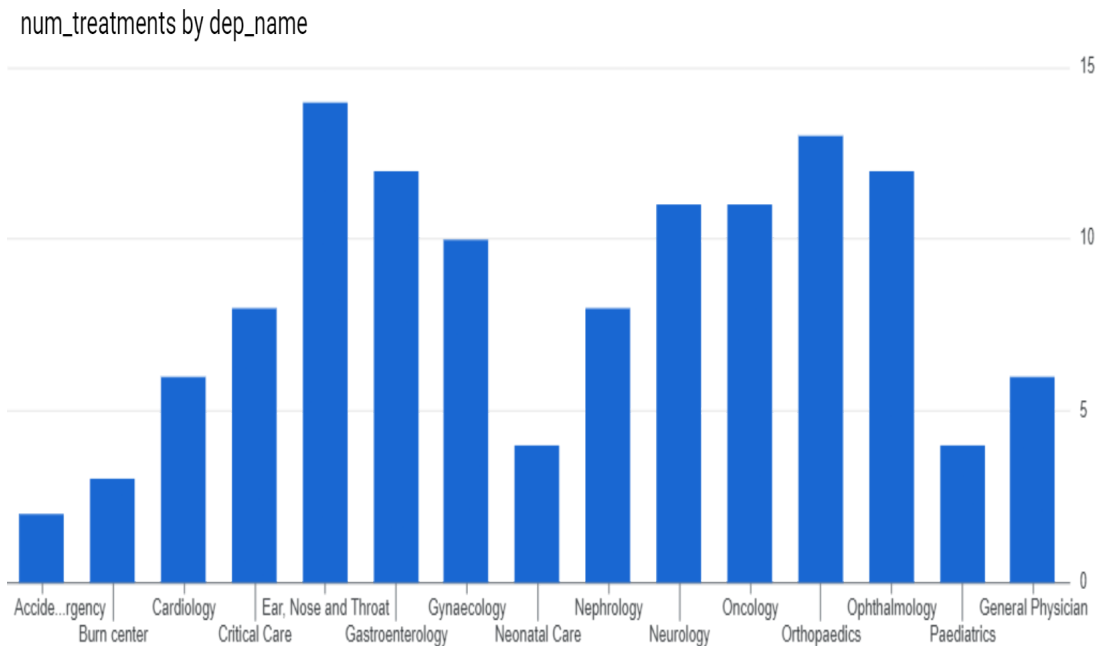


2. Common Medical Conditions: The most prevalent medical conditions include diabetes, high cholesterol, low blood pressure, schizophrenia, and high blood pressure. Addressing these conditions effectively can improve patient care.

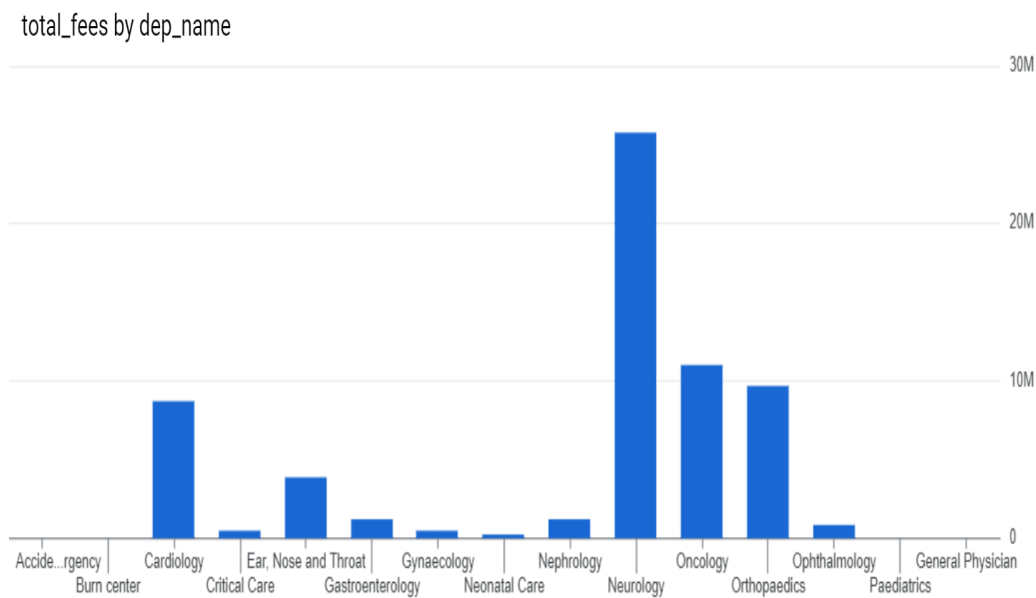


● **Treatment insights:**

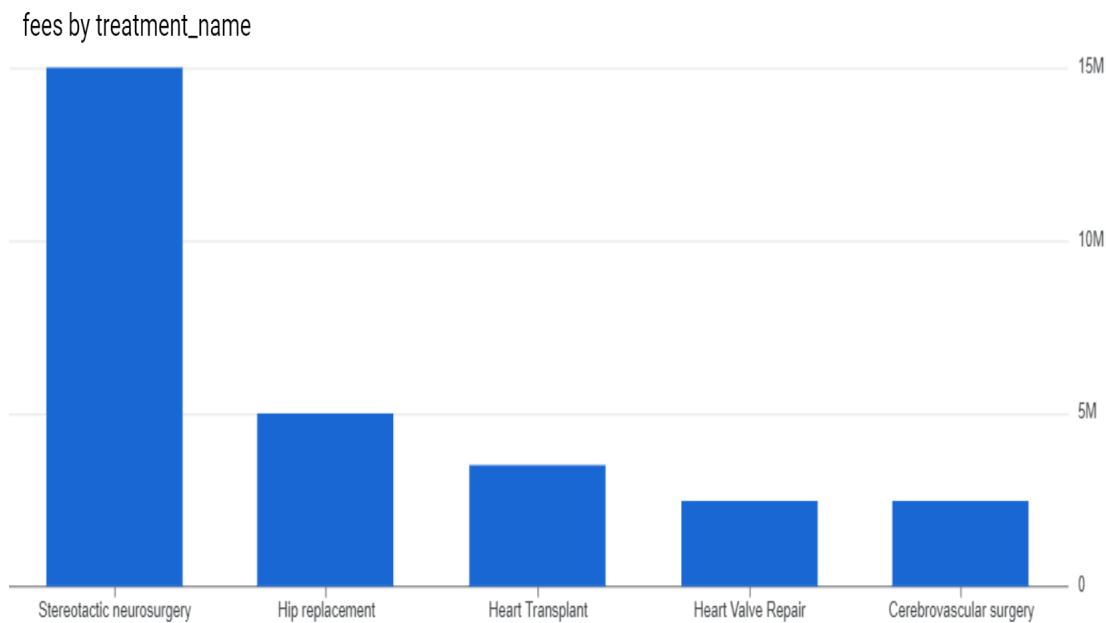
1. Departmental Utilization: ENT, Orthopedics, and Ophthalmology provide the highest number of treatments. This insight can guide resource allocation and staffing decisions.



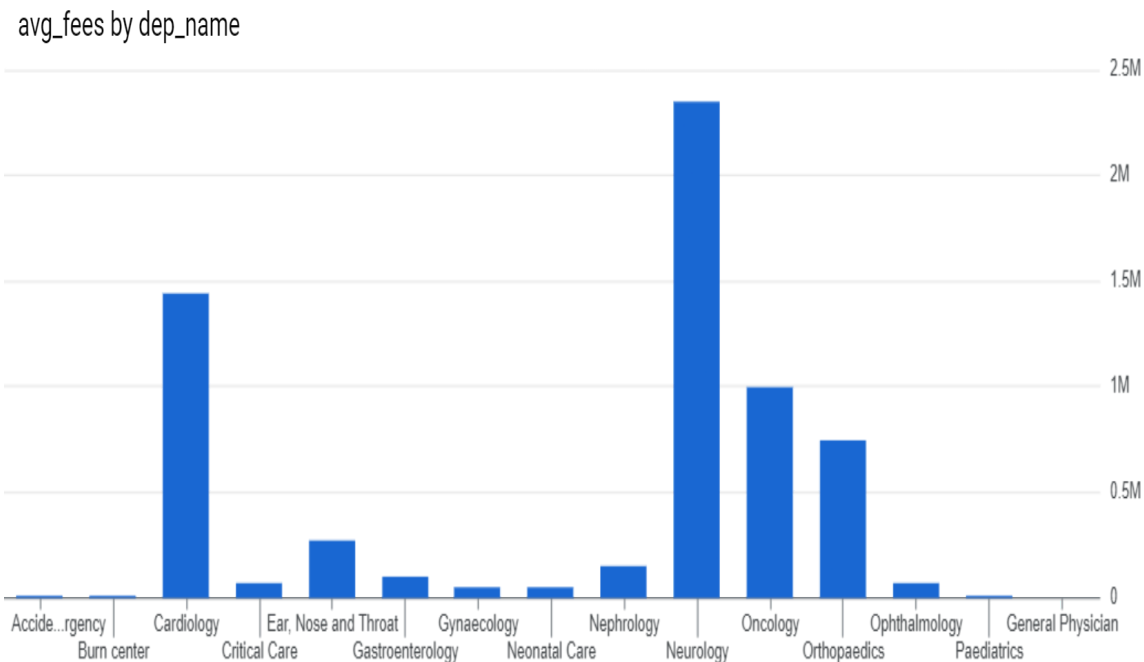
2. Revenue Generation: The hospital's revenue is significantly influenced by departments like neurology, Oncology, and Ophthalmology, which generate the highest total fees.



3. Treatment Costs: The treatments listed below are among the most expensive offered. Effective pricing strategies for high-cost treatments can enhance financial sustainability.

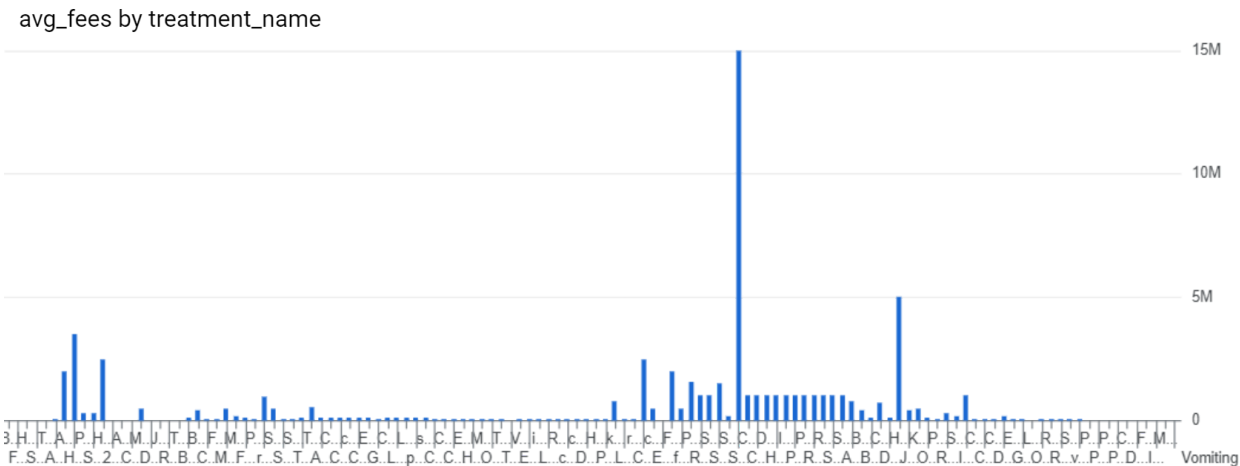


4. Average Fees: The average fees collected per department demonstrate varying revenue streams across different medical specialties.



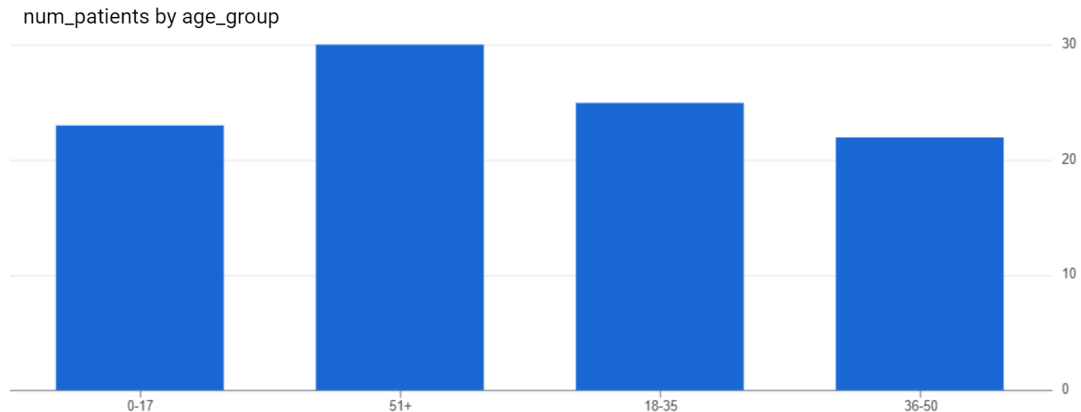
● **Resource Utilization:**

Treatment Costs: Understanding the average fees collected per treatment is crucial for assessing the financial viability of each medical procedure. Stereotactic neurosurgery has the highest average. fees



- **Demographic Analysis:**

Age Distribution: Patient age groups are categorized as 0-17 years, 18-35 years, 36-50 years, and 51+ years. These demographics provide insights into the hospital's patient population and enable tailored care approaches.



- **Admission Trends:**

Seasonal Patterns: Admissions have exhibited fluctuations throughout the year. Identifying these trends can aid in proactive resource management.

4. Suggestions Based on the above results

- **Gender Diversity and Inclusion:** Consider implementing initiatives to ensure gender balance among employees in various departments, fostering an inclusive work environment.
- **Tailored Care Approaches:** Utilize insights from patient demographics and common medical conditions to design personalized care plans for patients, enhancing the quality of healthcare services.
- **Strategic Resource Allocation:** Allocate resources based on treatment utilization, departmental revenue generation, and patient demographics. This approach can optimize efficiency and patient satisfaction.

- **Pricing Strategies:** Evaluate pricing strategies for high-cost treatments to ensure they align with patient expectations and market dynamics, thereby promoting affordability.
- **Staff Training and Development:** Leverage insights from treatment and admission trends to identify peak periods and plan employee shifts accordingly. Adequate staffing during busy seasons can enhance patient care quality.
- **Marketing and Outreach:** Highlight the hospital's expertise in addressing prevalent medical conditions to attract patients seeking specialized care.
- **Continuous Monitoring and Improvement:** Establish a system to regularly review and analyze data to adapt strategies, aligning healthcare services with changing patient needs.

5. Conclusion

Through in-depth SQL analysis, this project has provided valuable insights into various aspects of the hospital's health services. By implementing the suggested recommendations, the hospital can strategically enhance patient care, resource allocation, and operational efficiency, ultimately leading to improved healthcare outcomes.

For further improvements, ongoing data collection, analysis, and adaptation of strategies are recommended to ensure the hospital remains responsive to patient needs and industry trends.