# *Hospital Data Analysis*

# Patient Demographics

Analyzing the core volume of patients and geographical distribution

# Patient Volume & Distribution

## 1. Total Number of Patients

Calculating the overall patient load across the entire hospital network.

```sql
SELECT SUM(patients_count)

FROM hospital_data;
```

## 2. Patients by City

Aggregating patient counts to identify the primary service areas.

```sql
SELECT location AS city,

SUM(patients_count) AS total_patients

FROM hospital_data

GROUP BY city

ORDER BY total_patients DESC;
```

## 3. Top 3 Busiest Departments

```sql
SELECT department,

SUM(patients_count) AS total_patients

FROM hospital_data

GROUP BY department

ORDER BY total_patients DESC

LIMIT 3;
```

## 4. Lowest Patient Volume

```sql
SELECT department,

SUM(patients_count) AS total_patients

FROM hospital_data

GROUP BY department

ORDER BY total_patients

LIMIT 1;
```

# Financial Performance

Tracking medical expenses and identifying cost drivers.

# *Maximum Medical Expenses*

## 5. Identifying High-Cost Centers

This query isolates the single hospital facility incurring the highest medical expenses. Understanding outliers in expenditure is critical for budget audits and financial planning.

```sql
SELECT hospital_name, medical_expenses

FROM hospital_data

ORDER BY medical_expenses DESC

LIMIT 1;
```

# *Expense Analysis*

## 6. Daily Average Expenses

Calculating the average daily cost per admission.

```
    SELECT hospital_name,

    AVG(medical_expenses / (discharge_date
- admission_date)) AS average_expense

    FROM hospital_data

    WHERE discharge_date - admission_date
> 0

    GROUP BY hospital_name;
```

## 7. Monthly Expenses Report

Tracking financial outflow trends month-over-month.
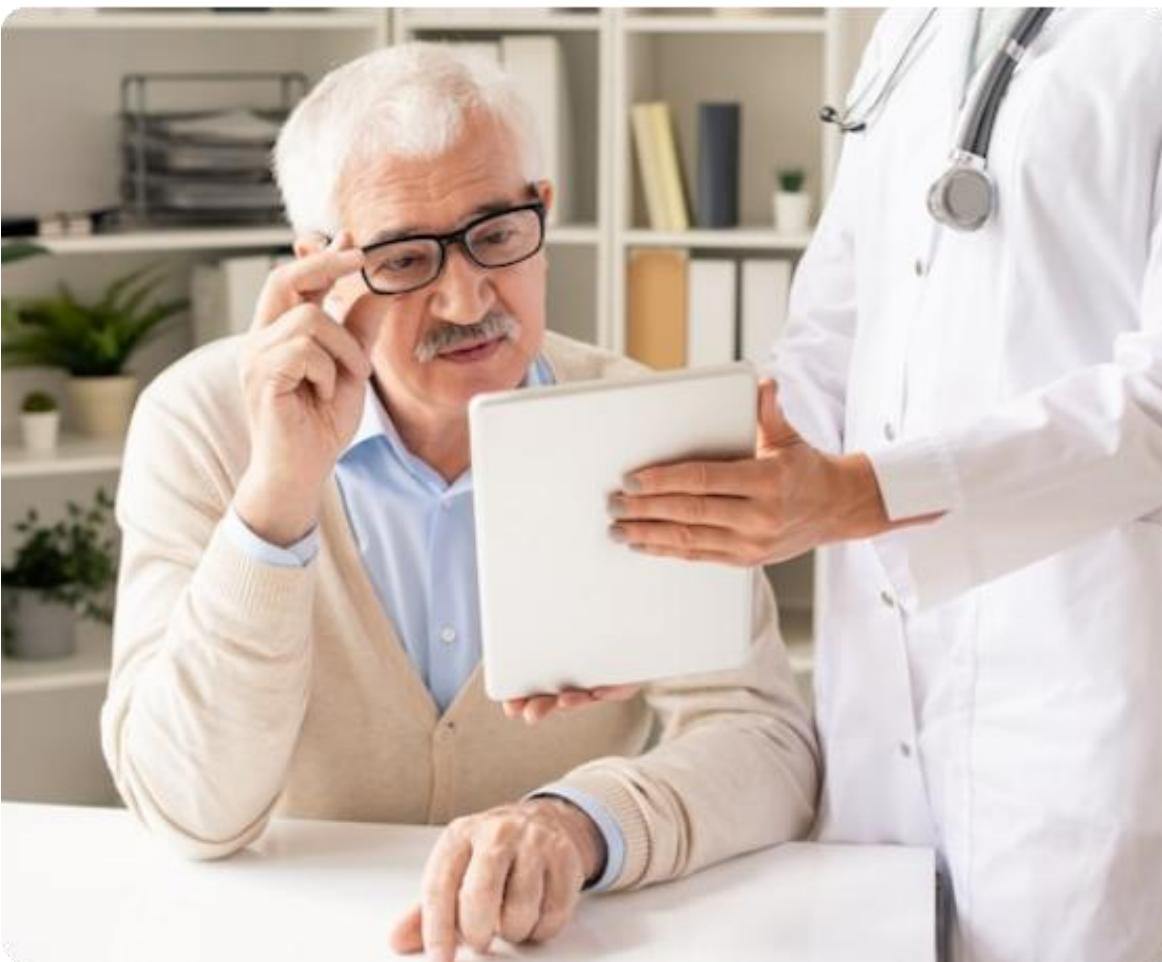
```
    SELECT EXTRACT(MONTH FROM
admission_date) AS Month_Number,

    SUM(medical_expenses) AS
Total_Expenses

    FROM hospital_data

    GROUP BY Month_Number

    ORDER BY Month_Number;
```

# Operational Efficiency

Optimizing staffing levels and managing patient stays.

# *Staffing & Stay Duration*



## 8. Avg. Doctors per Hospital

```
SELECT AVG(doctors_count)

FROM hospital_data;
```

## 9. Avg. Length of Stay

```
SELECT department,

    AVG(discharge_date - admission_date) AS
stay_days

    FROM hospital_data

    GROUP BY department

    ORDER BY stay_days DESC;
```

# *Longest Hospital Stay*

## 10. Identifying Prolonged Cases

Finding the specific case with the maximum duration between admission and discharge. This insight helps in reviewing complex cases or identifying potential inefficiencies in discharge procedures.

```
SELECT hospital_name, location,

admission_date, discharge_date,

(discharge_date - admission_date) AS
stay_days

FROM hospital_data

ORDER BY stay_days DESC

LIMIT 1;
```

# Key Takeaways

## Volume Analysis

Patient counts and city-wise distribution help identify high-demand locations.

## Cost Control

Monitoring max expenses and daily averages ensures financial sustainability.

## Resource Optimization

Balancing doctor counts with length-of-stay metrics improves operational flow.

Thank you for reviewing the SQL Hospital Data Analysis😊.

~Vanshika Dubey