🏥 US Hospital Dataset Analysis — Final Report

📊 Dataset Summary:

- **Records:** ~100 hospitals (2,000+ patients)

- **Time Period:** Oct 2018 – Oct 2023

- **Includes:** Patient demographics, admission details, discharge dates, insurance & billing data

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🔍 Key Insights

1. Top 5 Insurance Providers by Patient Volume

Insurance Provider	Number of Patients
Medicare	2,421
Cigna	1,930
Aetna	1,916
Blue Cross	1,868
UnitedHealthcare	1,830

📌 *Insight:* Medicare dominates patient coverage, with over 24% of all patients.

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2. Average Length of Hospital Stay

- 🛏️ **Average Stay Duration: 13.8 days**

📌 *Insight:* Long average stays suggest a need for review of discharge planning or case severity.

3. Monthly Admission Trends

- 📈 Admissions steadily increase from 2018 to 2023

- 📌 **Peak months:** January 2019, August 2023, October 2023

📌 *Insight:* Surge in admissions during winter and late summer—potential seasonal illness pattern.

4. Hospitals with Highest Patient Admissions

Hospital Name	Admissions
Smith PLC	19
Smith and Sons	17
Smith Inc	14
Smith Ltd	14
Johnson PLC	13

📌 *Insight:* Some hospital chains dominate the dataset — investigate performance variation across their branches.

5. Average Billing Amount by Insurance Provider

Insurance Provider	Avg. Billing ($)
Cigna	24,201
Aetna	24,125
Medicare	22,951
UnitedHealthcare	22,913
Blue Cross	22,787

📌 *Insight:* Cigna and Aetna patients incur higher average billing. Useful for revenue forecasting or audit focus.

✅ **Recommendations**

- Investigate drivers behind long average hospital stays (>13 days).

- Prepare hospitals for admission peaks around **January and August–October**.

- Align insurance processing efficiency with **Cigna** and **Aetna**, where billing is highest.

- Focus resource allocation and care optimization around **high-volume hospitals and departments**.