Hospital Data Analysis - Summary

This analysis was conducted to better understand patient visit patterns, disease distribution, and pharmacy spending within the county referral hospital. The goal was not just to build visuals, but to uncover meaningful insights that can support smarter operational and financial decisions.

From the data, it is clear that hospital visits are concentrated around a few key diagnoses. Flu (56 visits), Typhoid (54 visits), and Diabetes (53 visits) account for a significant portion of the 300 total visits recorded. These conditions appear consistently across counties, which suggests that the disease burden is widespread rather than isolated to one specific region. Infectious and chronic conditions continue to play a major role in hospital demand, highlighting the need for consistent drug stocking and preventive health efforts.

When comparing total visits to pharmacy revenue, there is a visible positive relationship . Counties with more visits generally generate more pharmacy revenue. However, the relationship is not perfectly proportional. Some counties show relatively high pharmacy revenue despite moderate visit volumes. This indicates that treatment complexity and medication intensity influence pharmacy costs just as much as patient traffic. In other words, more visits do not automatically mean higher revenue; the type of treatment matters.

Departmental analysis shows that pharmacy revenue is fairly distributed across inpatient, emergency, and outpatient services, with inpatient contributing slightly more overall. This is expected, as inpatient cases typically involve longer stays and higher medication use. However, the difference between departments is not extreme, which suggests that pharmaceutical spending is driven by patient case mix rather than inefficiency in a single unit.

Looking at age groups, seniors account for the highest medication quantities issued. This aligns with the reality that older patients often require ongoing management for chronic conditions. Young adults and adults contribute significantly to visit counts but show comparatively lower medication intensity. This insight is important for forecasting pharmaceutical demand and planning long-term procurement strategies.

The relationship between average length of stay and average pharmacy spending per visit provides additional context. There is a moderate positive relationship — longer stays tend to correspond with higher pharmacy costs. However, not all diagnoses follow this pattern. Some conditions are associated with extended hospital stays but relatively lower medication spending. This suggests that certain cases require monitoring and supportive care rather than intensive drug treatment. Conversely,

some diagnoses result in higher medication spending despite shorter stays, likely reflecting acute or specialized interventions.

Overall, the findings show that pharmacy expenditure is shaped by multiple factors, including disease type, patient demographics, departmental activity, and treatment complexity. Visit volume alone does not fully explain spending patterns. For hospital management, this means that effective planning should focus on high-burden diagnoses, demographic trends, and case severity to ensure both financial sustainability and quality patient care.