Healthcare Readmission Analysis – SQL Project

Executive Summary

This document presents an end-to-end healthcare data analysis project focused on identifying factors associated with 30-day hospital readmissions using SQL Server.

Problem Statement

Hospital readmissions within 30 days increase healthcare costs and indicate potential gaps in care quality. This project aims to quantify readmission rates and identify high-risk patient segments.

Dataset

The analysis uses the Diabetes 130-US Hospitals Readmission Dataset comprising approximately 100,000 inpatient encounters from U.S. hospitals.

Baseline KPI

The overall 30-day readmission rate across all encounters was calculated as approximately 11.16%.

Key Analytical Findings

Age-based analysis showed the highest proportional risk in the 20–30 age group (14.24%). Length-of-stay analysis indicated higher readmission risk for long stays (>7 days). Prior inpatient and emergency utilization were strong predictors of readmission.

Skills Demonstrated

SQL aggregation, GROUP BY analysis, CASE logic, JOIN operations, data validation, and professional documentation.

Conclusion

This project demonstrates job-ready SQL analytics skills aligned with real-world healthcare data analyst expectations.