

# Healthcare Readmission Risk Analysis – Executive Summary

## Project Overview

This analysis evaluates 101,766 hospital encounters to identify drivers of 30-day readmission risk and develop an explainable, rule-based patient risk stratification framework. The goal is to support targeted discharge planning and reduce preventable readmissions.

## Key Findings

- Overall 30-day readmission rate: 11.2%
- High-risk tier readmission rate: 16.9%
- Low-risk tier readmission rate: 10.0%
- Patients with  $\geq 1$  emergency visit: 14.4% readmission rate
- Long stays (7+ days): 13.2% readmission rate
- High-risk diagnosis group: 16.9% readmission rate

## Risk Stratification Results

Risk Tier	Patients	Readmission Rate
High Risk	6,004	16.9%
Moderate Risk	25,206	13.1%
Low Risk	70,556	10.0%
Overall	101,766	11.2%

## Business Impact

The model identifies a 70% relative increase in readmission risk between high- and low-risk patients. This segmentation framework enables healthcare organizations to prioritize care coordination, allocate case management resources efficiently, and implement targeted transitional care interventions.