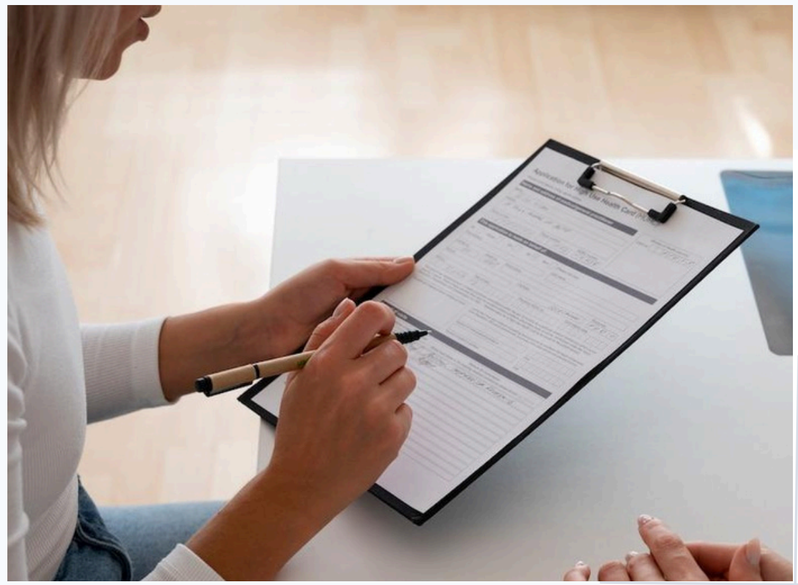
PREDICTING HOSPITAL READMISSION RISK

PROJECT OVERVIEW

Objective:

To develop a model that accurately identifies patients at high risk of readmission, enabling proactive intervention to reduce healthcare costs and improve patient care.



BUSINESS UNDERSTANDING

PROBLEM

Hospital readmissions are costly and negatively impact patient well-being.

IMPACT

Reducing readmission rates improves hospital efficiency, lowers costs, and enhances patient satisfaction.

DATA UNDERSTANDING

PATIENT DEMOGRAPHICS

Age, gender, ethnicity, etc.

HOSPITAL METRICS

Length of stay, discharge type, etc.

GOAL

To leverage the data for a comprehensive view of patient risk factors.

SOLUTION APPROACH

Data Preparation

Clean and preprocess structured and unstructured data, handling missing values and performing feature engineering.

Model Training and Tuning

Training models, applying SMOTE for balance, and tuning parameters using RandomizedSearchCV to maximize model performance.

Evaluation

Comparing models based on accuracy, precision, and recall to ensure reliable identification of high-risk patients.

RECOMMENDATION SYSTEM

APPLICATION

Based on prediction scores, the system would recommend targeted interventions for high-risk patients.

BENEFITS

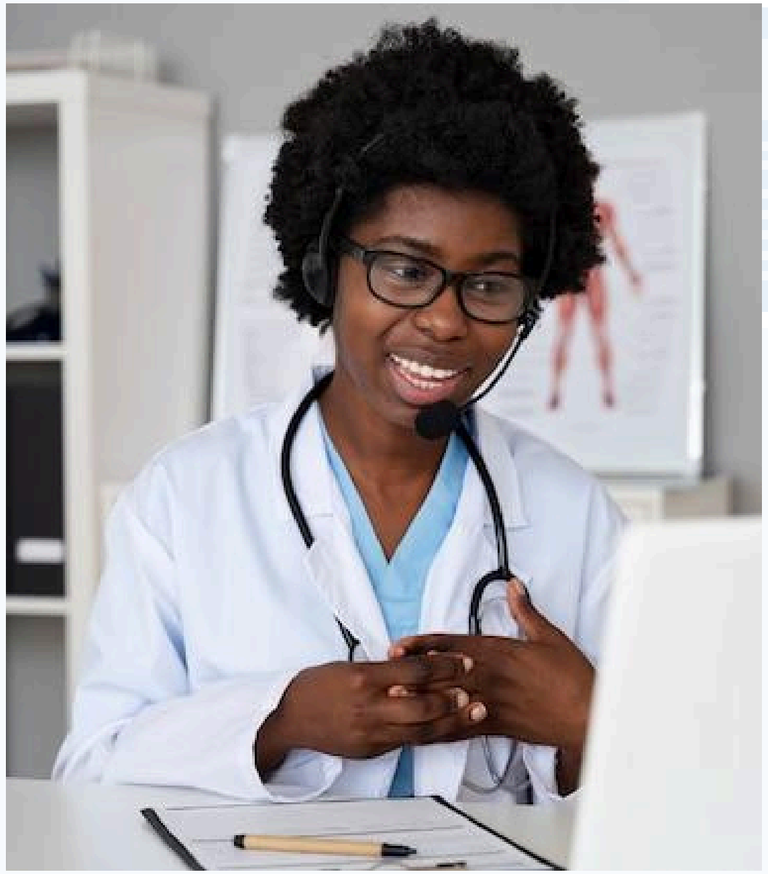
Enables hospital staff to allocate resources more effectively, focusing on patients who need follow-up care most urgently.

EXPECTED OUTCOMES

Reduced Readmissions

Cost Savings

Better Patient Health Outcomes



CONCLUSION

Our model can reliably anticipate average hospital stay lengths. This insight allows hospitals to plan staffing, bed occupancy, and supply needs more effectively.

THANKS!

DO YOU HAVE ANY QUESTIONS?