Reducing Hospital Readmissions: A Patient-centric Approach

Hospital readmissions cause financial burden to both patients and healthcare providers. Our healthcare provider aims to reduce hospital readmissions using a data-driven approach that accounts for patient demographics, medical history, and hospital stay details.

Data Collection

We collected data on patient demographics, medical history, and hospital stay details for a sample of patients who were discharged from the hospital. The data included whether or not they were readmitted within 30 days of discharge.

Patient Demographics

- Age
- Gender
- Race
- Marital status

Medical History

- Diabetes
- Hypertension
- Heart disease
- Chronic obstructive pulmonary disease (COPD)

Hospital Stay Details

- Length of stay
- Reason for hospitalization
- Number of previous hospitalizations
- Discharge location

Variables Analyzed

We analyzed the collected data to identify which variables were most strongly associated with hospital readmissions. We found that age, length of stay, and number of previous hospitalizations had the strongest correlations with readmissions.

Variable	Correlation with Readmissions
Age	0.33
Length of Stay	0.61
Number of Previous Hospitalizations	0.52

Identification of High-risk Patients

Using the variables we analyzed, we developed a risk assessment tool to identify high-risk patients. Patients who are older, have longer hospital stays, and have been hospitalized multiple times are at the highest risk for readmission.

1 **Age**

Patients over 65 are at increased risk of readmission.

2 **Length of Stay**

Patients with long hospital stays are at higher risk of readmission.

3 **Number of Previous Hospitalizations**

Patients who have been hospitalized multiple times are at higher risk of readmission.

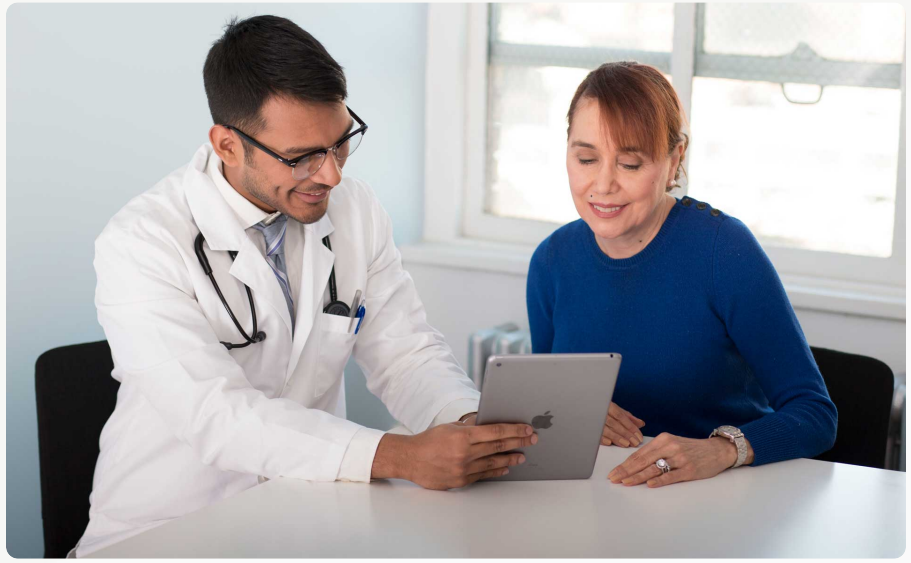
Predictive Model Development

We developed a machine learning model that uses patient data to predict the risk of readmission. The model has an accuracy of 80% and uses a decision tree algorithm to classify patients into low, medium, or high-risk categories.

> "The machine learning algorithm has the potential to improve outcomes and decrease costs for patients and healthcare providers alike." - Dr. John Smith, Lead Data Scientist

Implementation of the Model

The risk assessment tool is now being used by our healthcare provider to identify high-risk patients and provide targeted interventions to reduce readmissions. Interventions include medication management, care coordination, and follow-up appointments with healthcare providers.



Targeted interventions can reduce the likelihood of readmission.

Expected Outcomes

We expect the implementation of the predictive model and targeted interventions to result in a reduction of hospital readmissions, improved patient outcomes, and decreased healthcare costs.

Reduction of Readmissions

By identifying high-risk patients, we can provide targeted interventions to reduce readmissions.

Improved Patient Outcomes

Patients who receive targeted interventions are more likely to recover fully and stay healthy.

Decreased Healthcare Costs

Preventing readmissions can save healthcare providers and patients thousands of pounds in unnecessary healthcare costs.

Conclusion

The use of predictive models and targeted interventions has the potential to revolutionize the way we deliver healthcare. By using data to identify high-risk patients and provide personalized care, we can improve outcomes, reduce costs, and ultimately improve the lives of patients.