

Hospital Readmissions EDA & Modeling

Diabetes type 2 is the most dangerous type of diabetes, which means they have too much sugar in the blood. These types of people depend on insulin which causes more costs.

In the EDA it was found that all the columns with the different medications are related to medication for diabetes patients with type 2.

Insight 1: Proportion of patients by probability range and diabetes medication.

In the top 100 patients, is possible to visualize that most of them need medication for diabetes. Patients with 90%-95% being readmitted are the group of patients with higher proportions of needs diabetes medication.

In one study made by the Economic Costs of Diabetes in the U.S. in 2017, the total costs of diagnosed diabetes have risen to \$327 billion in 2017 from \$245 billion in 2012. Which includes, 30% in hospital inpatient care 30% prescription medication to treat complications of diabetes, 15% anti-diabetic and diabetes supplies, and 13% physician office visits.

When a patient is readmitted, means that they will need more medication, which indicates an increase in the costs related to medication for the hospital and for the patient.

Insight 2: Proportion of patients by probability range and A1C results.

The A1C Test measures the percentage of red blood cells that have sugar-coated hemoglobin. The A1C Result estimates the average blood sugar level over the past 3 months and gives information about the quantity of glucose serum a patient will need. Patients with A1C Results higher than 6.5% indicate diabetes.

With the analysis of the graph is possible to conclude that most of the patients didn't make an A1C Test which may be prejudicial for the hospital in a way to control how much glucose they will need to treat the patients.

Patients that have a probability of being readmitted between 75%-85% and >95% present higher average blood sugar levels.

Insight 3: Proportion of patients by probability range and glucose serum.

The glucose serum is a test for diabetes patients, which measures the amount of glucose in the fluid portion of the blood. If the results are between 70mg to 99mg it is considered normal, between 100mg to 126mg it is considered pre-diabetes or risk of developing diabetes and above 126mg it is considered to have diabetes.

One more time, most of the patients didn't do any tests which may be prejudicial for the hospital due to the lack of information about the patients.

Patients that have a probability of being readmitted between 75%-85% present higher glucose serum results.

Insight 4: Number of patients by probability range and discharge disposition.

It is possible to analyze those patients with a probability of being readmitted between 69%-75% display a higher number of patients that were discharged home after the treatment.

This may indicate that sending the patients home something is not the best option, it would be more beneficial to transfer them to another hospital facility which would decrease the chances of them being readmitted again to the hospital.

References:

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