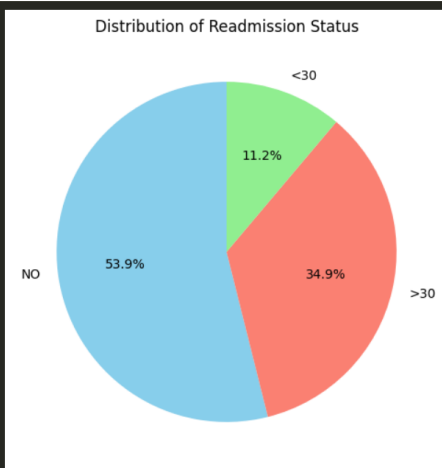
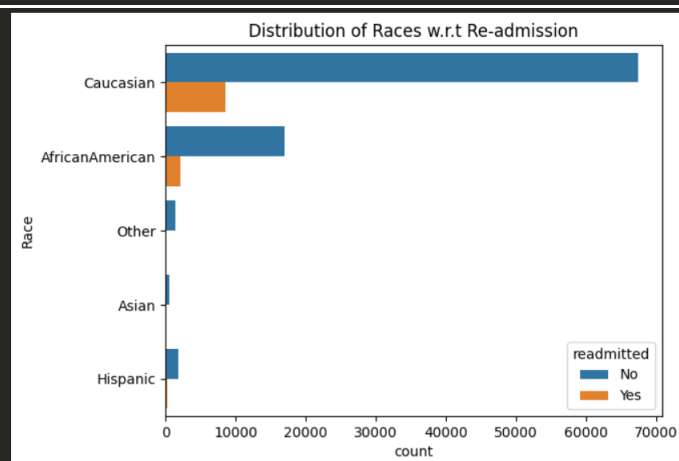


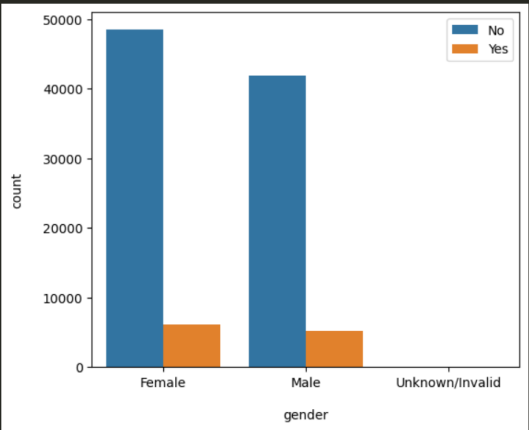
Some columns contain high percentages of missing values and may need to be dropped or imputed. If a key analytical column (like weight or payer\_code) has many missing values, it is often excluded from



Target contains no null values since we are interested in the objective i.e 'Early Readmission' or 'No-early-readmission' we will consider '<30' as 'Readmission' and ['>30','No'] as 'No\_Readmission' we will encode Readmission = 'Yes', No\_Readmission = 'No'

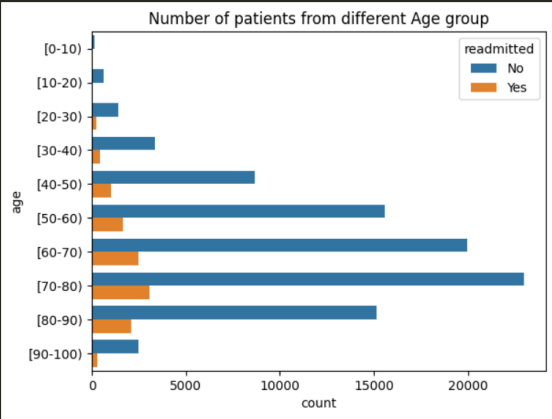


from above plot, we can infer that caucasians and AfricanAmericans have high re-admission rate

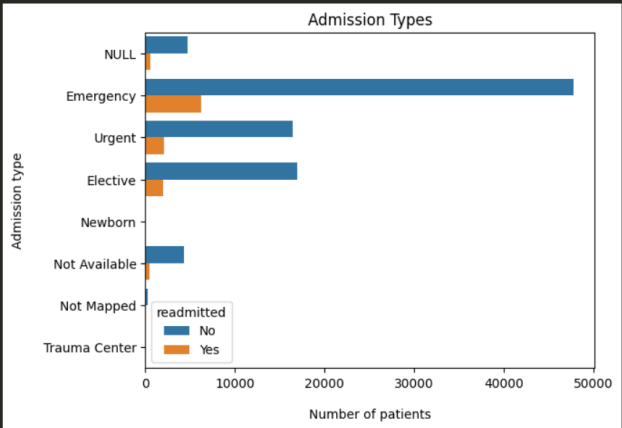


This compares readmission rates between males and females. It helps assess whether gender plays a role in patient outcomes and if differentiated healthcare approaches are needed.

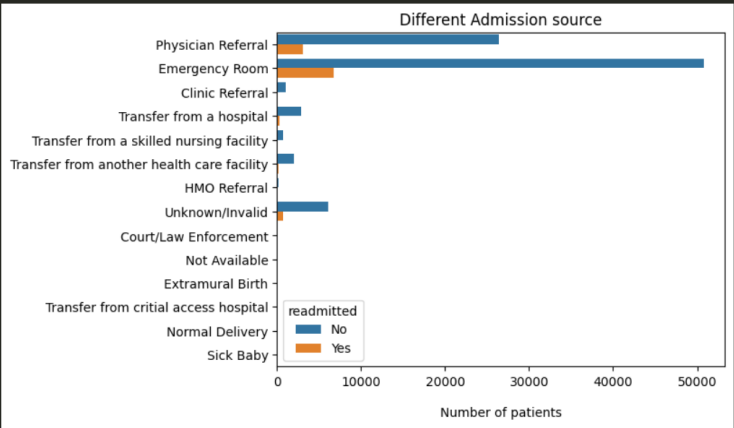
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from above plot we can say most number of patients admissions are in the age range of 40-100 people who are between age 70-80 have highest inpatient encounter as well as re-admission rate

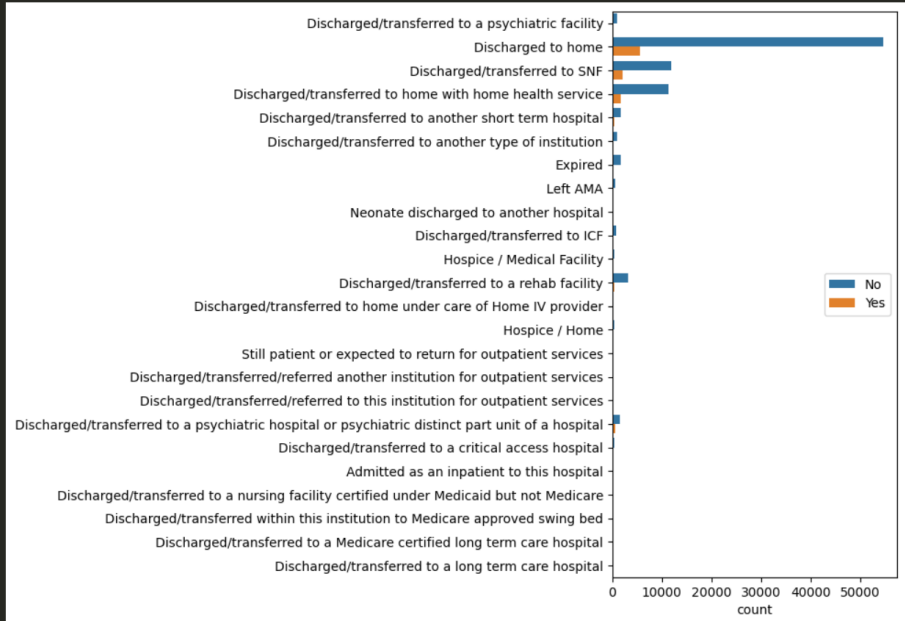


This chart illustrates how different types of hospital admissions relate to patient readmission. Patients admitted via emergency or urgent types tend to have higher readmission rates, possibly due to the severity and acute nature of their conditions. On the other hand, elective admissions are generally associated with more stable cases, showing lower readmission likelihood. This suggests the admission type can be a predictive factor for hospital resource planning and follow-up care.

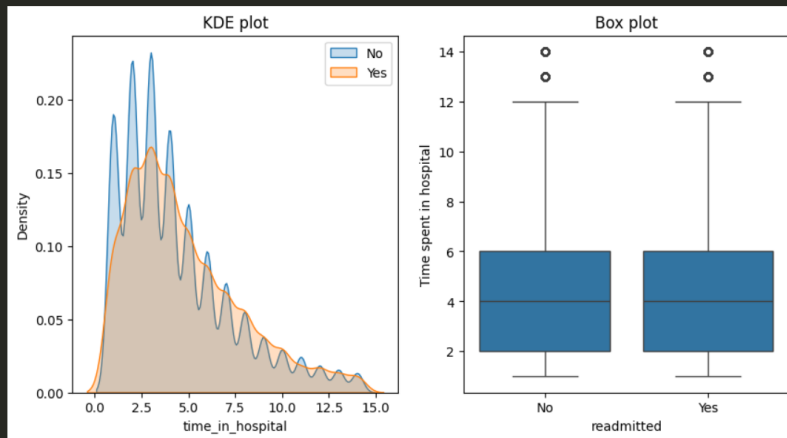


Generate Code Markdown

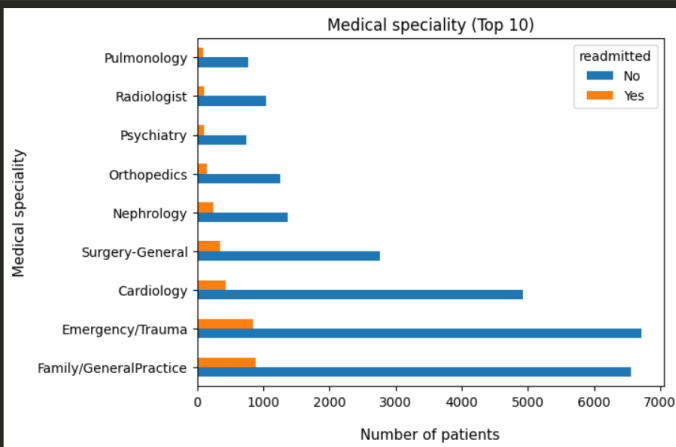
This visualization explores how the origin of admission impacts readmission. Patients who enter the hospital through emergency rooms or referrals from clinics show higher readmission rates compared to those admitted through regular outpatient follow-ups. This pattern indicates that patients who enter via less controlled or urgent channels may be at a higher risk of recurring issues, and could benefit from closer post-discharge monitoring



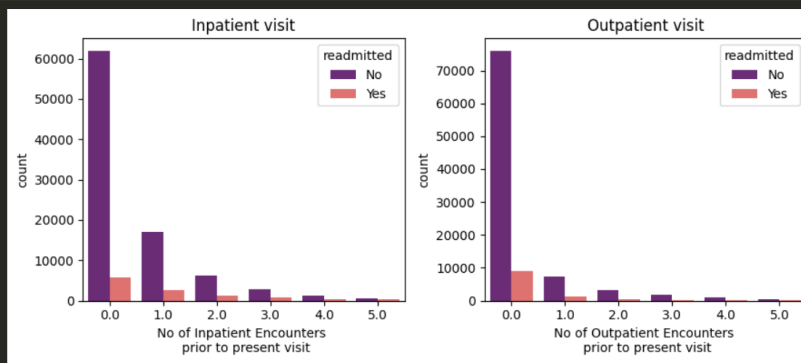
This plot highlights the relationship between where patients go after discharge and their likelihood of readmission. Patients discharged to home tend to have lower readmission rates, whereas those sent to rehabilitation centers, skilled nursing facilities, or hospice care show elevated readmission rates. This may reflect that these patients have more complex or unstable health conditions, requiring long-term support. The insight can guide hospitals to flag high-risk discharges for follow-up.



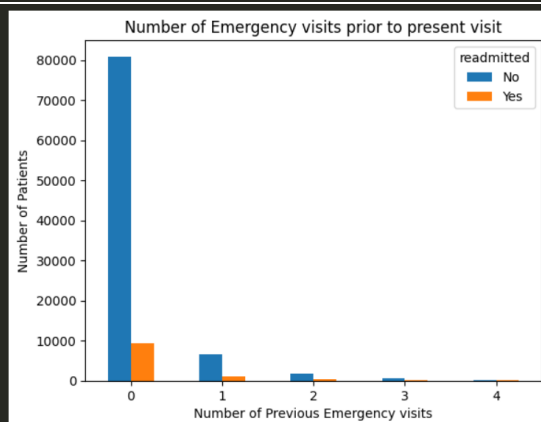
If the distribution is skewed, some patients tend to stay longer than others. The boxplot reveals differences in length of stay between readmitted and non-readmitted patients.



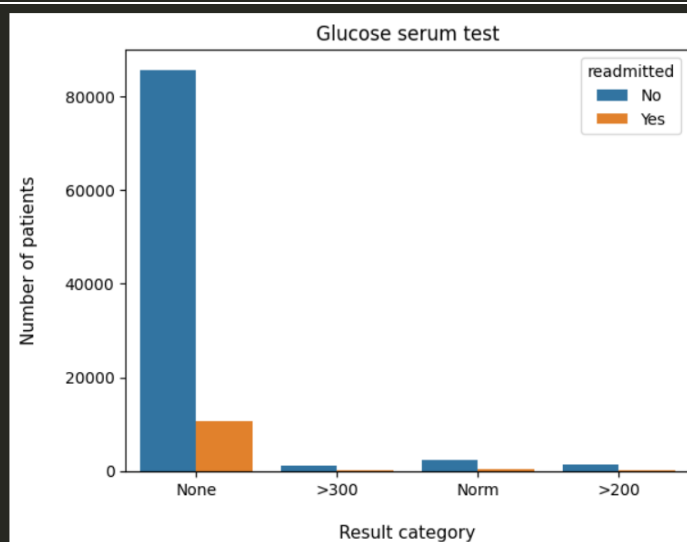
Shows the most common medical specialties in the dataset. Also helps analyze whether certain specialties have higher readmission rates.



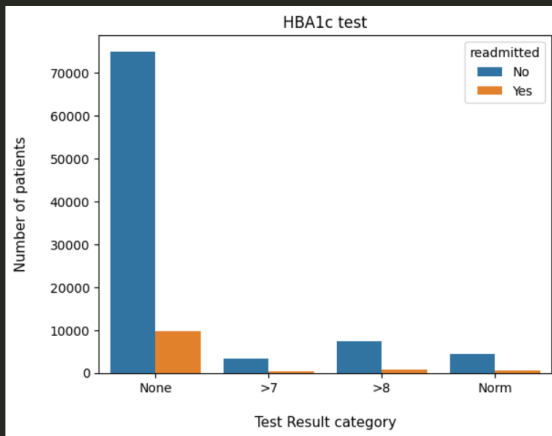
Visualizing upto 5 Inpatient and outpatient encounters Since we are interested in only early re-admission rates (<30 days) Observations says 0 or 1 previous Inpatient encounters have high re-admission rate Observations says 0 previous Outpatient encounters have high re-admission rate People having prior significant Inpatient/Outpatient encounters have less chance of getting readmitted be it less than 30 days or greater than 30 days Hospital administration might have taken Post-Hospitalization steps to prevent re-admission But the early re-admission (<30) is a area of interest.



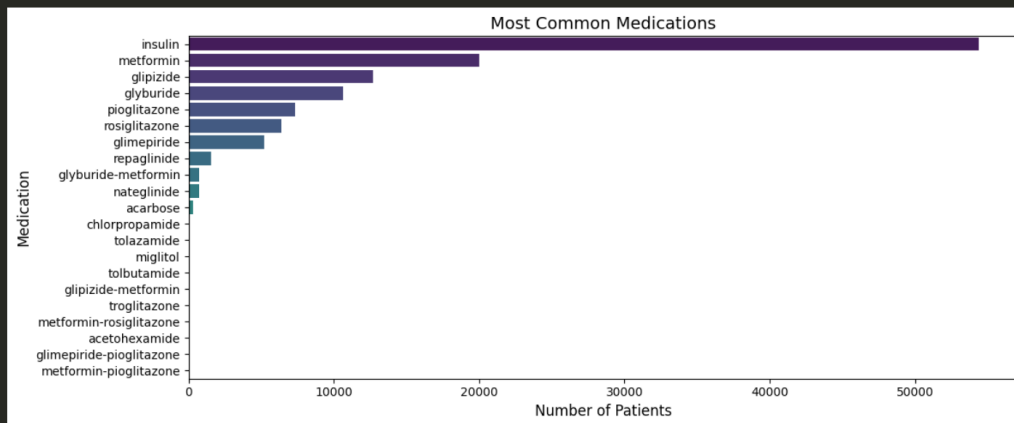
These visuals explore whether an increased number of lab procedures, outpatient visits, or emergency visits correlates with higher readmission rates. More medical activity may indicate more complex or critical patients.



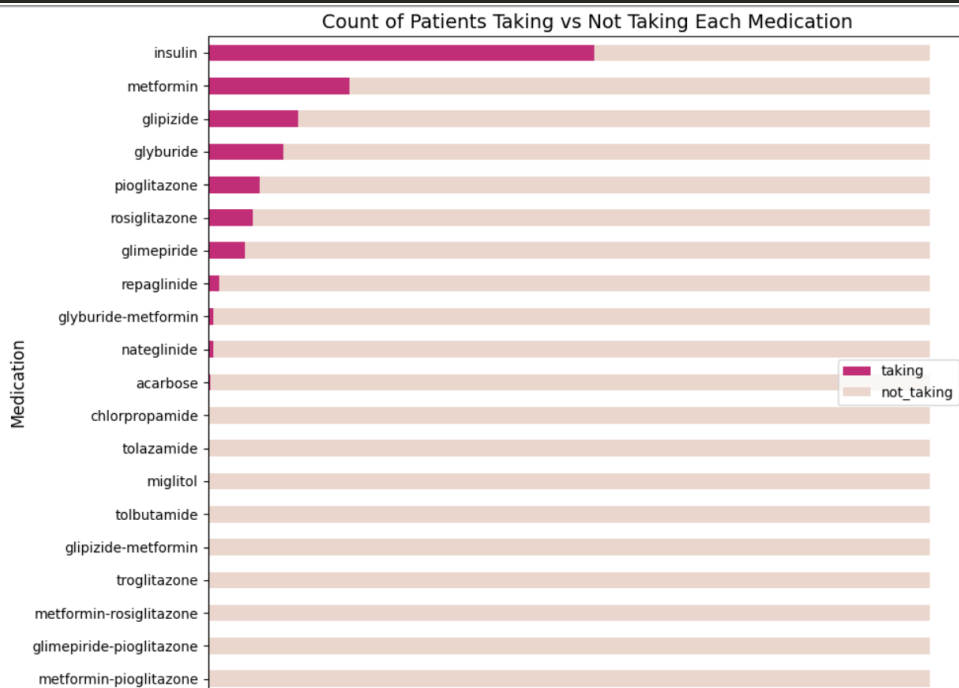
Inpatient encounters where Glucose serum test has not been done, more cases of early re-admission

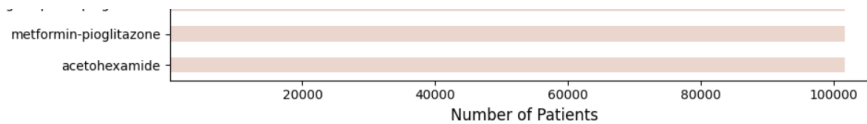


from above observation it shows that people who have not undergone HBA1c test, they have high re-admission probability. also compared to '>7','Norm' the people who have '>8' HBA1c result have slightly higher readmission probability.

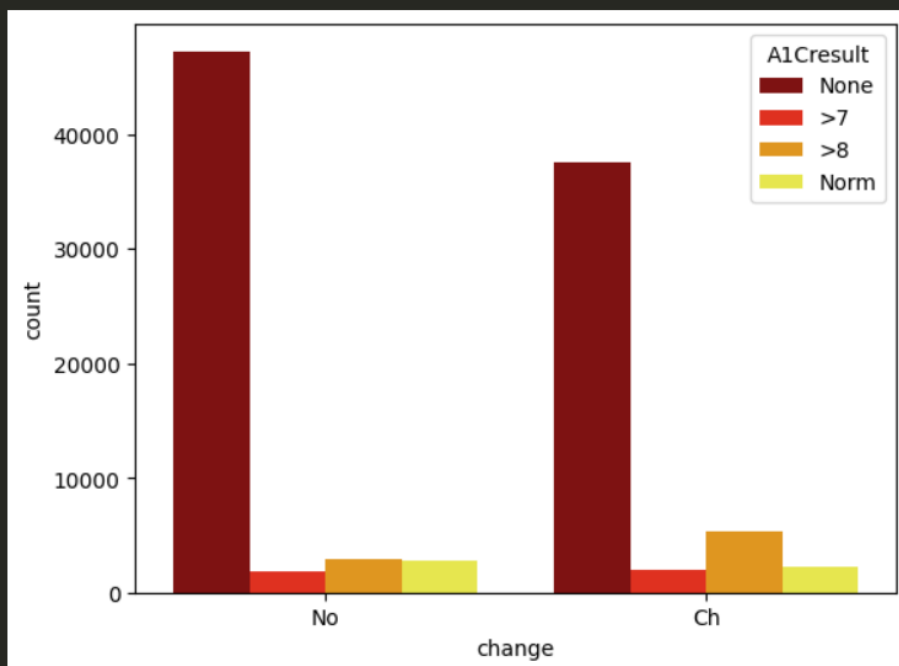
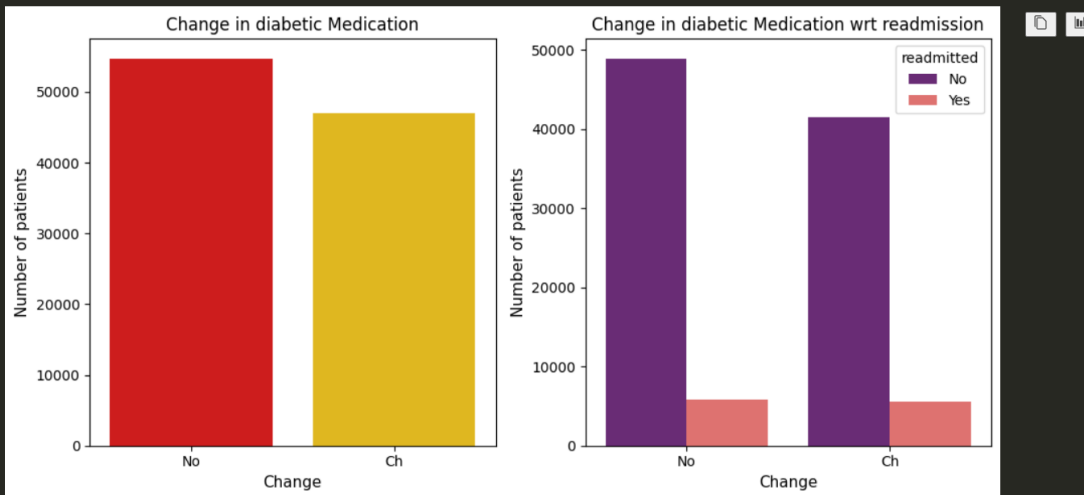


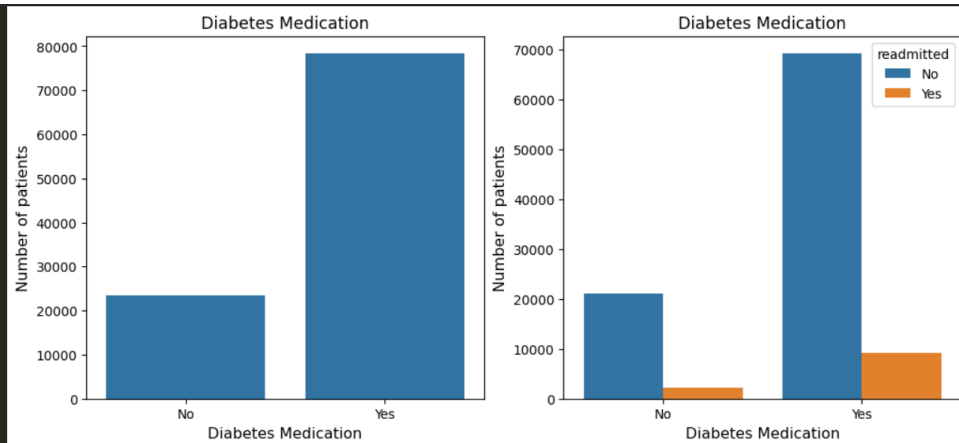
We see most common medication





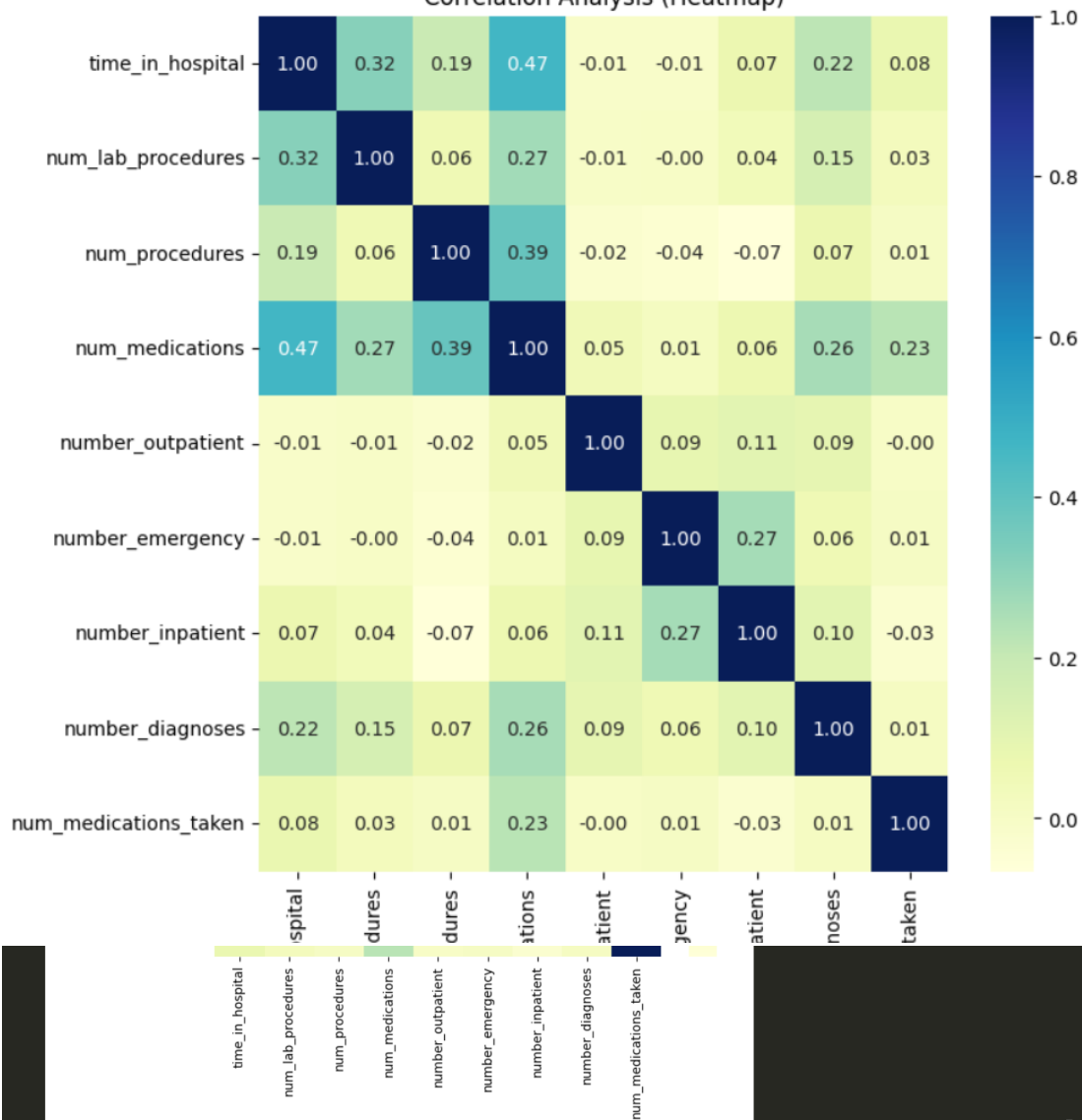
clearly we can see the zero values in some medicines which means Some medicines are not at all taken by any patients. or very few value\_counts, which will not give any information.





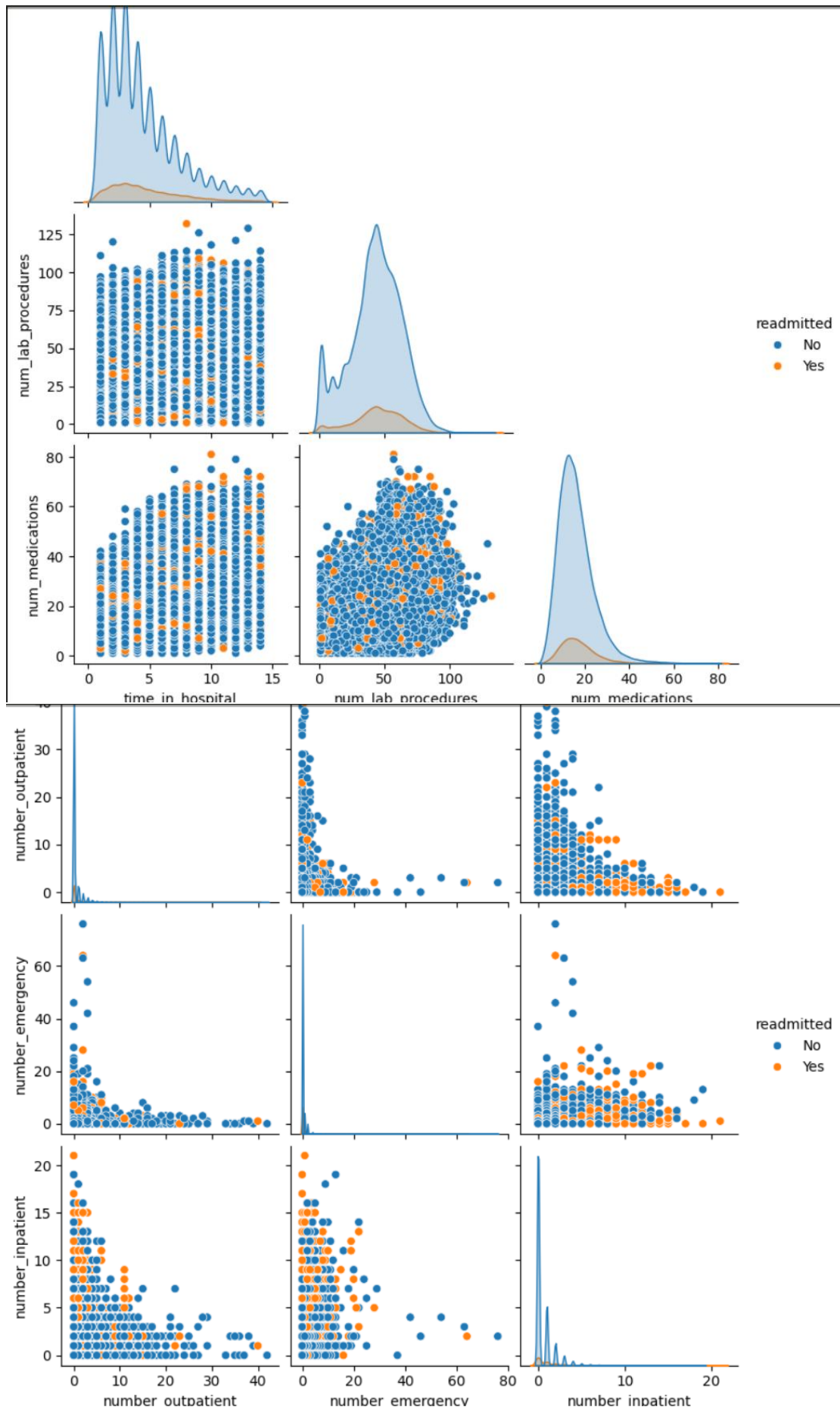
From above plot we can see that, medications have been changed for have high readmission chances

Correlation Analysis (Heatmap)



Shows correlations between numeric variables. For instance, a higher number of procedures might relate to longer hospital stays or increased readmission.





Bivariate plots help visualize patterns between variables and readmission. If clear clusters of readmitted patients appear, they can reveal potential risk factors.

