The questions listed for each team member

M V N S H Praneeth (50592326):

Q1. How does the proportion of ICU admissions vary across the top 10 discharge dispositions, and what might this reveal about patient acuity and resource allocation in different care pathways?

Significance

The significance of this question lies in its potential to discover critical insights into patient care and hospital operations. By analyzing this relationship, healthcare providers can identify which discharge dispositions are associated with higher ICU admissions, indicating varying levels of patient acuity. This understanding can ultimately lead to better patient outcomes while managing costs effectively.

Q2. How do discharge dispositions differ among patients receiving various types of anesthesia, and what might this reveal about post-operative care pathways?

Significance

The significance lies in its ability to highlight the impact of anesthesia type on patient outcomes after surgery. By exploring this relationship, healthcare providers can identify potential trends or patterns that may indicate varying levels of risk or complications. Understanding these differences can enhance post-operative care strategies, and ultimately improve patient safety.

Abdul Wasi Lone (50609995):

Q1: What are the factors that impact the length of hospitalization of a patient?

A1: This question as the associated EDA for the Hypothesis is important to pre-emptively figure out the factors that impact the length of hospitalization of a patient for a pre-emptive response. We figure out that the gender of a patient, the type of anaesthesia they have been administered and whether or not it was decided to admit them to the ICU impact their length of stay and is therefore important. Relevant EDA is given in the EDA pdf with plots and non-graphical techniques.

Q2. Is there a relation between the Patient's age and their ASA Rating?

A2: ASA is the assessment of a patient's health that helps predict the risk of complications during surgery. We figure out that older patients tend to have a higher ASA rating and are therefore at a greater risk of complications. Relevant plots and other observations are given in the pdf attached.

Akhil Venkata Shiva Sai (50606819):

Q1: How do the post-operative trends accompany the patients being admitted?

A1: Understanding post-operative trends is directly linked to patient outcomes. Post-operative complications that result in longer hospital stays can **clog bed availability**, especially in high-demand departments like the ICU. Analyzing these trends helps in **predicting patient recovery trajectories**. If certain trends, such as extended ICU stay, correlate with worse post-operative outcomes, hospitals can **anticipate which patients might need more attention** or early interventions to avoid severe complications.

Predict patient outcomes and take preemptive actions.

Streamline patient flow and hospital resource allocation.

Q2: How does the Sex of a particular person affect the Discharge disposition(where he goes after discharge) and who is admitted to the ICU more times? What is the relation between the Length of Stay vs whether he is admitted to the ICU or not with the help of Sex of a person given

A2 :

1. Improving Patient Outcomes: By understanding gender differences in discharge disposition and ICU admissions, healthcare providers can tailor interventions and follow-up care.
2. Resource Allocation: Identifying which sex requires more ICU care can help in better allocation of ICU resources (beds, staff, etc.).
3. Cost and Efficiency: Analyzing the length of stay concerning ICU admissions and sex can provide insights into hospital resource management, cost control, and potential areas to improve care efficiency.

The information of where the code associated with each question is located

Akhil : Model_Training_akhil_Q_2_CatBoost.ipynb and Model_Training_akhil_Q_2_XGbost,ipynb

Praneeth : M V N S H Praneeth_Phase 2 Logistic Regression.ipynb and M V N S H Praneeth_Phase 2 ANN,ipynb

Wasi : Wasi_50609995_Models.ipynb

The analysis of the question is located

It is in the same zip file with names

Akhil : DIC_Phase_2_report_akhil

Praneeth: M V N S H Praneeth_DIC_Phase_2

Wasi : Wasi_model_report

The folder structure information

- It contains all the ipynb files along with the report mentioned clearly with names