Pharmaceutical Dashboard Summary

Key Metrics from Exploratory Data Analysis:

- Gender distribution is nearly even between male and female patients.

- Patients with high blood pressure and high cholesterol are more likely to respond to DrugC.

- Sodium-to-potassium ratio (Na_to_K) is strongly correlated with drug effectiveness.

Drug Response Trends:

- DrugC shows higher effectiveness in patients aged over 60.

- DrugA and DrugB have overlapping effectiveness, mostly used in younger patients with normal cholesterol.

Recommended Actions:

- Focus marketing efforts on DrugC for elderly population segments.

- Personalize drug assignment using a classification model based on patient's clinical profile.

Model Insights:

- Logistic Regression offers transparency in prediction.

- Random Forest offers a balance of accuracy and interpretability.

- XGBoost outperformed others slightly but is less explainable.

Dashboard Visuals (Suggest embedding in Tableau or Plotly Dash):

1. Pie chart: Drug distribution by age group.

2. Bar chart: Drug effectiveness vs. Na_to_K.

3. Heatmap: Feature correlation.

4. Model accuracy comparison.