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|  |  | Cardiac Analytics  Predicting Heart Failure |

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**Objective-**

The goal of our company is to provide useful insights through visualization to our clients in health Industry. We provide insights for various critical health issues like heart attack, Cancer, diabetes, and many other critical diseases.

The objective is to perform analytics by using clinical records of patients to predict the mortality rate by heart failure. We will be using age, diabetes, sex, platelets, and many other independent variables to predict the patients which are at a greater risk of getting a cardiovascular disease.

We will be creating data visualizations to identify patterns, understand the data better, finding the outliers and to communicate this information clearly and efficiently.

**Software Used:**

* **Power BI**

We will be using Power BI to create an interactive dashboard with powerful visualizations because using an interactive dashboard is a better way to visualize data than using the legacy tools. Power BI dashboards have enhanced visibility, key performance indicators, is better for decision making, have enhanced visibility.

* **Microsoft Excel**

We will be using Microsoft Excel for data cleaning like getting rid of unnecessary data columns and removing duplicates.

**Type of visuals used to find insights:**

1. We will be using **line charts to compare data with time** and find insights.
2. We will be using **column chart to compare the data** of each category.
3. We will be using **pie chart** to understand the composition of data.

**Our Clients -**

The insights are used by the government and private hospitals who use our information to enhance their service and for a better recovery rate of the patients.

**Data Source**: We get the data from our clients (Hospitals), different gov sites and we work as per their requirement. Through various visualization techniques we try to achieve the client needs. [Cardiac Analytics.docx](file:///Users/simrondora/Documents/Thomas/Cardiac%20Analytics.docx)

The records present in this data set are:-

Table

Description automatically generated

We modified the original data by replacing few columns containing binary numbers to text, For Ex: Modifications done for Sex which was “1=Male, 0=Female”, High blood pressure from “1 & 0 to 1= Yes, 0=No”; Smoking as “1=Yes, 0=No”.

Below snapshot is from Excel with Modified data.

Table

Description automatically generated

We uploaded the above data to Power Bi to create our Visualizations. Below are the charts with insights gained.

Tree Map- This chart is used for representing hierarchical data using nested rectangles. Here, the graph depicts death by the level of serum sodium in the blood(mEq/L)

Chart, treemap chart

Description automatically generatedClustered Column Chart- This chart depicts the comparison between number of deaths caused by smoking in both male & female category.Chart, bar chart

Description automatically generatedPie Chart- A pie chart represents numbers in percentages, and the total sum of all segments needs to equal 100%. Here, It represents number of deaths caused by the Ejection Fraction(Percentage of blood leaving the heart at each contraction)

Chart, pie chart

Description automatically generatedStacked Area Chart- This graph represents the deaths occurred vs age. For ex- Maximum deaths have occurred at age group 60.Chart, histogram

Description automatically generated

**References-**

[**https://www.kaggle.com/andrewmvd/heart-failure-clinical-data**](https://www.kaggle.com/andrewmvd/heart-failure-clinical-data)

[Cardiac Analytics.docx](file:///Users/simrondora/Documents/Thomas/Cardiac%20Analytics.docx)

[**https://powerbi.microsoft.com/en-us/**](https://powerbi.microsoft.com/en-us/)