**Project Title: Healthcare Data Analysis: Exploring Patient Records and Medical Trends**

In this project I utilized Microsoft Excel for a comprehensive analysis of a healthcare dataset, including patient demographics, medical conditions, and treatment details. Employing Excel's data analysis features, the project aims to unveil patterns and correlations, providing actionable insights for healthcare decision-makers.

I chose to identify relationships involving patient’s age, gender and medical condition,

· To work easier with the age column (in years), we converted any age below 40 years to young and those above 4o years to old and used these new parameters as our basis for comparison.

· There was a total of 10000 rows with data.

· The average age was 51.4522 years with the youngest patient being 18 years and the oldest 85 years.

· 4925 Males vs 5075 Females.

· 3407 falling in the young category vs 6593 in the old category. Therefore, the majority of the patients were over the age of 40.

**Comparing Age and Gender, overall, there were more young people with slightly more females than males.**

**While comparing medical conditions to age group, most old people were diagnosed with cancer yet more young people were diagnosed with hypertension.**

**But in comparison across gender, females were more commonly diagnosed with Cancer followed by asthma then obesity while males commonly presented with hypertension, arthritis and asthma in that order.**

**Below is a graph, summarizing all three data comparisons.**

**Age Group Analysis**

The patients were categorized into different age groups and the medical conditions was analyzed and visualised within the age groups.

From the result and chart below, The age group with the highest count is 56-100, indicating that a significant portion of the patients in this dataset falls into the older age category. The counts for the age groups, 26-35, 36-45, and 46-55 are relatively close, suggesting a fairly even distribution among these middle-aged groups. The fact that the 56-100 age group has substantially more patients (4444) compared to the other groups implies a notable representation of older individuals in the dataset.

**Insurance Provider Analysis**

The chart below provides a summary of the billing amounts for different insurance providers for the patients. Cigna insurance has the highest total billing amount of approximately $52.34 million. Followed my other insurance providers. While medicare has the lowest billing amount.This data can help identify trends, assess the financial impact on healthcare providers, and inform decision-making in the healthcare industry.

**Conclusion**

Based on the presented data, an observation emerges suggesting that older individuals are more likely to seek healthcare attention compared to their younger counterparts. However, the data does not provide specific reasons behind this trend. It is plausible that this tendency contributes to a higher incidence of diagnosed conditions among the elderly, potentially influencing their prevalence within the overall population.

Moreover, the data highlights a notable gender disparity, indicating that a larger number of females sought healthcare compared to males. The underlying factors behind this observation are not explicitly defined within the available data, suggesting the need for further in-depth analysis to uncover the contributing factors.

**Recommendations**

Recommendations for further analysis include exploring additional parameters that could help elucidate the observed discrepancies. Consider investigating factors such as the specific hospitals providing care, types of insurance coverage, and the total billing amounts for the healthcare services. A more comprehensive analysis of these variables may offer valuable insights into the patterns observed in the dataset, contributing to a more thorough understanding of healthcare-seeking behaviour and potential influencing factors.