Impact of Medical Conditions Across USA

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Abstract

This capstone project investigates the impact of various medical conditions across different regions using comprehensive research and development data from multiple countries. The study employs advanced business analytics techniques to provide a detailed understanding of how medical conditions vary by region and their implications for healthcare systems and policy-making.

The project's objectives are to evaluate the incidence and management of different medical conditions, analyze the strain on healthcare systems, identify correlations between the prevalence of medical conditions and various factors such as socioeconomic status and healthcare infrastructure, and provide data-driven recommendations for healthcare policy improvements and resource optimization. The methodology consists of several parts:

1. **Exploratory Data Analysis (EDA)** - Collecting, cleaning, and visualizing data to identify trends and anomalies.
2. **Insights and Trend Analysis** - Conducting time series analysis and regional comparisons to examine healthcare delivery and resource utilization.
3. **Correlation and Causal Analysis** - Using correlation and regression analysis to determine relationships between variables and explore causal relationships.
4. **Predictive Modeling and Scenario Analysis** - Building predictive models to forecast future trends and conducting scenario analysis to evaluate public health interventions.
5. **Synthesis and Reporting** - Compiling a comprehensive report and preparing a presentation of the findings and recommendations.

The project will utilize Python and R for data analysis, along with machine learning libraries such as scikit-learn, TensorFlow, and Keras. By leveraging these advanced analytics techniques, the project aims to deliver valuable insights and recommendations for optimizing healthcare resources and policies across different regions.