

PUBLIC HEALTH AWARENESS CAMPAIGN

– Phase2

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INTRODUCTION :

In this phase, we will discuss about the techniques and tools that will be used to advance our comprehension of PUBLIC HEALTH AWARENESS CAMPAIGN ANALYSIS. The objective of this phase is to harness the power of machine learning algorithms to forecast disease outbreaks and extract insights from public health data, ultimately enhancing public health service quality and community well-being.

DATA COLLECTION AND PREPARATION :

Data Collection involves the systematic gathering of relevant information from various sources, which can include surveys, databases, sensors, social media, and more. It's

essential to ensure that the data collected is accurate, complete, and representative of the phenomenon under study. In public health awareness campaigns, data collection may involve obtaining information about campaign reach, engagement, demographic profiles, health outcomes, and resource allocation.

Data Preparation is the process of cleaning, organizing, and transforming raw data into a structured and usable format for analysis. This includes tasks such as handling missing values, removing duplicates, standardizing formats, and aggregating data as needed. Proper data preparation is crucial for accurate analysis and insightful reporting, as it helps ensure that the data is reliable and ready for further processing.

DATA MODELLING :

Data modeling in this project involves creating a structured representation of the collected data. This representation typically defines how different data elements are related, organized, and hierarchically structured. Data models can help in understanding the underlying patterns and associations within the data, which is essential for making informed decisions and gaining insights. In the context of the project, data modeling is crucial for establishing relationships between campaign data, demographic information, and health outcomes, enabling a

deeper understanding of the campaign's effectiveness and its impact on target audiences. It provides a foundation for generating meaningful reports, visualizations, and analysis that guide evidence-based decision-making to enhance the campaign's success.

REPORT DEVELOPMENT :

Report development step is the process of creating informative and visually appealing documents that present the project's findings and insights. These reports are designed to communicate the campaign's performance, outcomes, and recommendations to various stakeholders, including policymakers, healthcare professionals, and the general public. Utilizing tools like IBM Cognos, report developers can transform data and analysis results into easy-to-understand charts, graphs, and narratives. Effective report development is essential for conveying the campaign's impact, supporting data-driven decisions, and ensuring that key stakeholders have access to the information needed for improving public health initiatives

DATA ANALYSIS :

Data analysis is the process of examining and interpreting the collected data to extract meaningful insights and patterns. Through techniques such as statistical analysis, data mining, and visualization, analysts uncover trends and relationships within the data. In this context, data analysis

helps evaluate the effectiveness of the campaign, identify target audience behaviours, and measure the impact on public health outcomes. It empowers decision-makers with the knowledge needed to optimize the campaign's strategies, refine messaging, and allocate resources more efficiently, ultimately contributing to the success of the public health initiative.

DERIVE INSIGHTS :

Deriving insights in a public health awareness campaign analysis project involves extracting valuable conclusions and actionable information from the data. By scrutinizing the data through various analytical techniques and tools, one can uncover patterns, trends, correlations, and areas of significance. These insights shed light on the campaign's strengths and weaknesses, audience responses, and overall impact, enabling informed decision-making and strategies for improving the campaign's effectiveness. Essentially, deriving insights transforms raw data into knowledge that empowers stakeholders to refine and optimize the campaign for better outcomes in public health awareness.

MACHINE LEARNING MODELS :

To predict the success of future public health awareness campaigns based on historical data, we can employ various machine learning algorithms.

1. **Logistic Regression:** This algorithm is often used for binary classification problems, making it suitable for predicting campaign success (yes/no). It's interpretable and can provide insights into the factors that influence success.
2. **Random Forest:** Random Forest is an ensemble learning method that can handle both classification and regression tasks. It's robust and can capture complex relationships in our data.
3. **Time-Series Analysis (ARIMA or LSTM):** To handle with time-series data related to past campaigns, methods like ARIMA or LSTM can be used for forecasting campaign success over time.
4. **Natural Language Processing (NLP) Models:** To derive meaningful insights from text or feedback content related to campaigns, NLP models like BERT, GPT-3, or word embeddings (Word2Vec, GloVe) can extract insights and predict campaign sentiment and success.