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D210 Representation and Reporting

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D210 Performance Assessment Reflection Paper

**1 Introduction**

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* 1. **Purpose and Function**

The primary needs outlined in the data dictionary were to provide an easily navigable dashboard with broad and understandable insights for multiple executive leaders. The datasets chosen for this analysis are the medical data set provided by WGU and a data set from Kaggle, Diabetes Health Indicators Dataset (Teboul). In this analysis, the charts compare readmission rates against patient demographics and pre-existing conditions. The purpose of this dashboard is to better understand how patient demographics and pre-existing conditions can affect whether a patient will be readmitted in the future.

* 1. **Variables**

The secondary dataset, Diabetes Health Indicators Dataset, was obtain from Kaggle. These extra data points allow for further analysis of patient demographics. Along with the first story analyzing how patient demographics interact with readmission rates, the second story, which utilizes the secondary dataset, analyzes potential relationships between patient demographics.

**2 Dashboard**

**2.1 Data Representation**

Executive leaders could utilize the map within story one to determine where within the United States there are higher admission rates. This factor would aid executive leaders in determining where to allocate more resources due to higher probability of patients’ readmission. Executive leaders could also utilize story two to determine a consensus of patient demographic that is more prone to health issues which could lead to higher readmission rates. By knowing the most at risk demographics, executive leaders could then provide more resources to areas with high concentrations of this population.

**2.2 Interactive Controls**

There are many interactive controls within this dashboard, the following are a few examples:

Diabetes filter: This filter utilizes a multiple values list to allow the user to refine patient data concerning whether a patient has diabetes. When utilized, it refreshes both the map and the bar chart to display updated readmission rates and color-coded associations.

Age filter: This filter utilizes a sliding scale to allow the user to refine patient data concerning age range. When utilized, it refreshes both the map and the bar chart to display updated readmission rates and color-coded associations.

**2.3 Colorblind Accessible**

According to the Tableau color palettes, the color palette selected for the charts in this dashboard is designed for colorblindness.

**3 Justification**

**3.1 Data Representation**

The data representations within the presentation that support how patient’s demographics and pre-existing conditions can affect whether a patient will be readmitted in the future are as follows:

Readmission Rates Map: This data visualization effectively conveys the narrative that patients with a greater number of health conditions experience elevated readmission rates. By offering users a tangible representation, it becomes evident that when demographics are overlaid with patients having pre-existing conditions, the map clearly illustrates higher readmission rates within this group.

Demographics Comparison Story: This data visualization indirectly, yet effectively, highlights the correlation between a higher number of health conditions and increased readmission rates. It visually presents patient demographics associated with patient health conditions. By making use of these visual representations, users can draw conclusions about demographics with a higher likelihood of health issues and, consequently, readmissions.

**3.2 Audience Analysis**

This presentation effectively tailored its message through a thoughtful audience analysis. The specific viewers for this presentation encompassed diverse groups of executive leaders who shared an interest in two primary areas: firstly, the examination of patient treatment and outcomes categorized by demographics and geographical regions; secondly, the exploration of research initiatives aiming to uncover trends in patient care and enhance patient outcomes through strategic measures (WGU).

Within the presentation, a critical focus was placed on how patient readmission is influenced by demographic factors and pre-existing medical conditions, with these insights being visually depicted on a choropleth map across states. Furthermore, the presentation unveiled key findings highlighting a heightened demand for hospital resources, particularly for a specific demographic subset—males aged 60 to 74 with pre-existing conditions. Recognizing this need, executive leaders could contemplate the development of specialized programs aimed at reducing the likelihood of readmissions for this particular demographic group.

**3.3 Universal Access**

The presentation was crafted to ensure universal accessibility for all viewers. This was achieved by employing color palettes that accommodate those with color blindness, utilizing straightforward yet impactful visuals, and providing an online dashboard to ensure accessibility for all.

**3.4 Presentation**

Two elements of effective storytelling that were implemented in the presentation were:

Narrative Structure: The presentation adhered to a structured narrative framework, comprising an introductory segment, a substantive core, and a conclusion. This framework was aimed at captivating the audience by furnishing a coherent and orderly progression of information. The introduction furnished essential context about both the source data and the presenter, ensuring a solid foundation for comprehending the forthcoming discussion. The main body delivered the data, insights, and pivotal findings, facilitating a deeper grasp of the presenter's rationale. In the end, the conclusion encapsulated the primary insights and issued a call to action.

Visual Storytelling: The presentation integrated interactive graphs and charts, serving a dual purpose: to sustain the audience's active involvement and to enhance their comprehension of the data. These visual aids effectively simplified intricate information into manageable segments, thus facilitating the audience's grasp of critical insights. The overarching goal of the presentation was to render the data more captivating and relatable, ultimately enriching the audience's comprehension and memory of the material.

**4 Supporting Documentation**

**4.1 Video**

This can be found within the attached file ‘Panopto Recording’.

**4.2 Sources**

Teboul, Alex. (2021, December). Diabetes Health Indicators Dataset, Version 1.

Retrieved December 19, 2022 from

https://www.kaggle.com/datasets/alexteboul/diabetes-health-indicators-dataset.

Western Governors University. (n.d.). D210 Representation and Reporting. Salt Lake City.