D210 - Representing and Reporting

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Part 1: Interactive Data Dashboard

A1. Datasets

WGU provides the WGU Medical Dataset through the following link:

https://lrps.wgu.edu/provision/227080088

The other dataset is provided by the National Institute of Diabetes and Digestive and Kidney

Diseases through the following link:

https://www.kaggle.com/datasets/uciml/pima-indians-diabetes-database

Both datasets are also included in the submission.

A2. Access Instruction

To access the Tableau Dashboard, please follow the following link to the public presentation:

https://public.tableau.com/app/profile/aaron.balke/viz/RepresentingandReporting/Respresenting
andReporting

A3. Navigation Instructions

To navigate the dashboard, please click the above link. The Tableau Story will be viewable, the

first page of the story is the "Title Card", begin at that page, and use the arrows of page

selections to change the page being viewed.

Part 2: Storytelling with Data

B. Video Presentation

A link to the video presentation is available here:

https://youtu.be/cCM3b2JZ4Ro

Part 3: Reflection Paper
Supporting Writeup

C1. The purpose of this presentation is to compare our patient metrics to a competitor to assess

the relative health of the populations accurately. Understanding where we fall short, and where

we overachieve, compared to our competition, will allow us to make better financial, and resource decisions, and better assist our patients.

C2. This is completed by creating our own custom features from the competitor's dataset of Outcomes, BMI and BloodPressure. These features are converted into matching fields to our dataset, Diabetes, Overweight, and HighBlood, to provide insights. We can compare these features directly between our hospital population and the competitors, allowing us to draw insights into the effectiveness of the hospital systems. Please note the conversions take place in a separate Jupyter Notebook File "data_cleanup.ipynb", included with the submission.

C3. The use of demographic data representations gives us the ability to compare general data about our populations easily. Notably, a discrepancy exists between the population's genders. The competitors dataset has only female patients, while ours is nearly half and half. When it comes to Overweight and High Blood Pressure, our populations are similar. Still, through measuring these values across patient ages, we see a gradual decline in overall patients with an increase in age. This brings us to a major observation of our comparison, our competitor does not have an older population. Executive leaders can use the information provided by these representations to enable further analysis, answering why our patient population is older, and if it is for good reason, making efforts to amplify the cause of these symptoms.

C4. The demographic comparisons use an interactive gender option, our competitor's data only has female patients, so it would not be fair to compare our mixed data set against there's. The ability to hide male and nonbinary options from the WGU dataset enables a more effective comparison, and the ability to visualize the same conclusions. The second interactive option is the age range parameter on the Age Comparison story page. These parameters allow us to adjust the age range being displayed on both the WGU and competitor bar charts. This functionality gives us the ability to paint the point that at almost all ages and ranges, WGU Hospital outperforms our competition when it comes to relative diabetes and overweight metrics.

C5. The dashboard is accessible to the colorblind through multiple methods. The first method is the use of high-contrast text. All text is dark blue on a white background, making the readable portions easy regardless of eye-complications. For the extreme KPI graphs, each line has its graph to communicate ideas effectively. For the rest of the graphs, the interactive controls allow you to hover over each value to get information on a data point, if you are unable to tell if a line is an overweight population or not overweight population, hovering over a point on that line will explicitly tell you without the need of colors. Additionally, colors have been adjusted. Originally, green and red were used for the color palette, but these have been switched out for blue and red to increase contrast for those with color blindness. (Kilin)

C6. The All-Healthy KPI is a calculated value representing if a patient has low blood pressure, and is not overweight or diabetic. If these are all false then the patient is showing all healthy indicators. On the opposing end, the All Unhealthy value represents if a patient has high blood pressure, is overweight, and is diabetic. The All-Healthy KPI representation helps paint the fact that as our populations age, our competitor begins to fall short when it comes to having All-Healthy indicators, but we have the same percentage of elder All-Healthy patients, as our young patients. The sharp decline shown in our competitor's plot helps visualize this problem DIA Hospital Systems is having. Additionally, the data provided for Diabetes and Overweight show that in almost any age range, our patients outperform our competitors in positive indicators. Each visualization is used to push the narrative that we are outperforming our competitors when it comes to positive indicators.

C7. Audience Analysis adapted the message by using simple, cut-and-dry presentation techniques. A comparison between competitors would only be done at a middle/executive level at the company. This would require a higher level of professionalism, and the presentation reflects that. Images, emojis, and casual language are not used in the presentation. This saves 'important folks' time, removes indirect or implicit concepts, and focuses the presentation on the conclusions made.

C8. The presentation is universally available through the use of Tableau Public. Tableau Public allows anyone to directly access the presentation online, download it for offline consumption, use it as a PDF, or emit bed into another website. In my opinion, the universal availability is most noticeable through PDF use, which would allow the blind to use reader applications to convert the visual presentation into an audio one.

C9. When it comes to effective persuasive storytelling, I believe that appealing to the ethos and providing credibility to the topic is the most important part. Until credibility is gathered, the audience will not value the presentation or presenter. This is why in the first few moments I made an effort to explain my background in finances, my years of experience with financial data, and how that experience relates to the current work being presented. The other element I find important to effective storytelling is the visual element. While the visual presentation only required 2 visualizations, I found this minimal amount inappropriate for the medium. If a video presentation is recorded, only using 2 visualizations is not adequate for audience engagement. The medium necessitates the multitude of visuals I used to create an engaging story.

D. Sources

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Additional Dataset:

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