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| Representation & Reporting |
| D210 |

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## Section 1: Purpose

The purpose of this dashboard is to provide an overview of hospital performance based on ratings and readmissions data. Attributes such as location and hospital ownership will be used to investigate whether regional or organizational factors influence hospital quality and patient outcomes. This includes analyzing whether hospitals run by certain types of organizations (e.g., government, proprietary) tend to have higher or lower ratings and readmission rates. The information obtained from this analysis can be used by stakeholders to make informed decisions about resource allocation, policy changes, and quality improvement initiatives for hospitals across the US.

## Section 2: Additional Dataset

This dashboard includes visualizations from two datasets: WGU’s Medical dataset and the Centers for Medicare and Medicaid’s Hospital Ratings dataset (2017). The additional dataset (Hospital Ratings) provides information that enhances the insights drawn. These variables include data on the location, overall rating, readmission rating, and ownership of hospitals across the US. The location information can be used to create state groupings, which allows for deeper analysis into the variation of hospital ratings and readmissions among states. Ownership information can provide insights into the relationship between hospital ownership and performance. For example, the analysis can be used to determine differences in quality of care provided by proprietary versus government-run hospitals.

## Section 3: Data Representations for Executive Leaders

The Hospital Ownership & Overall Ratings representation (refer to page 1 of the Tableau dashboard) can help executive leaders understand the relationship between hospital ownership and performance. Using this representation, executive leaders can identify whether significant differences exist between the quality of care provided by different types of hospitals, thus enabling them to make decisions about which types of hospitals they should allocate more resources and investments to. Executive leaders can use the Initial Length of Hospital Stay (refer to page 2 of the Tableau dashboard) representation to identify the locations (states and/or counties) that tend keep patients longer on average and investigate the causes of these abnormal hold times.

## Section 4: Interactive Controls

The hospital ownership filter (page 1) allows users to modify the presentation of the data by narrowing down the view of overall hospital ratings to specific types of hospitals based on their ownership type. For example, a user can filter the data to only display hospitals that are owned by non-profit organizations.

The state filter (page 2) enables users to modify the presentation of the data by providing a more detailed view of hospital performance at the county level within a specific state. This control allows users to select a specific state and drill down to view data on initial length of hospital stay at the county level; this granularity allows users to identify patterns that may not be apparent at higher levels of aggregation.

## Section 5: Accessibility

I built this presentation to be accessible for individuals with colorblindness by using a blue, orange, and blue-orange divergent color palette for the visualizations in my dashboard. Divergent color palettes are ideal for individuals with colorblindness because the opposing colors are easy to differentiate.

## Section 6: Data Representations for Storytelling

“Hospital Ownership & Overall Ratings” (page 1) is a bar chart showing average hospital ratings by ownership type supports my story by visually representing the differences in overall ratings across different hospital ownership types. Specifically, the chart shows that Government, Proprietary, and Tribal owned hospitals all have average ratings lower than 3 on a 5-point scale, which supports my initial assumption that certain hospital owners see lower overall ratings. This representation makes it easy for the audience to compare overall ratings across different ownership types and see the clear differences that exist between them.

“State Comparison” (page 3) is a pair of bar charts that show the relationship between hospital readmission scores and overall hospital ratings. In general, as the average readmission scores decrease, average overall ratings also decrease. This finding supports my initial assumption that a relationship exists between hospital readmission scores and overall hospital ratings. By using bar charts to display this information, the audience can easily identify trends relating to hospital readmission scores and overall ratings.

## Section 7: Audience Analysis

Executive leaders such as CEOs and Directors rarely have an in-depth understanding of data analytics or the time to examine complex analytical findings. As a result, I made strategic choices while designing the dashboard and visualizations to ensure that they were clear, concise, and easy to understand.

To help simplify the information presented and make it easier for the audience to follow along, I first organized each dashboard by topic. By breaking down the data into distinct topics, executives can quickly find the information that is relevant to them.

Second, I made sure that each dashboard contained simple visualizations and controls. This choice ensures that rather than getting bogged down with complex details, executive leaders understand the insights being presented.

Finally, I included a summary page (refer to page 4 of the Tableau dashboard) that listed the main points of the analysis. The summary page distills the key takeaways of the presentation into an easily digestible format that allows executives to understand the main points of the analysis without having to wade through the entire presentation.

## Section 8: Universal Access

The first choice I made to create a universally accessible presentation was choosing a color palette that accommodates individuals with colorblindness (refer to Section 5: Accessibility). By using a blue, orange, and blue-orange divergent palette, the included visualizations are legible and easy to understand for all users, regardless of their color vision.

The second choice I made in creating a universally accessible presentation was hosting the dashboard on Tableau Public. Tableau Public is a web-based platform that allows anyone to view data visualizations using a web browser. This means that viewers do not need to purchase a Tableau license or install specialized software to view the dashboard.

## Section 9: Effective Storytelling

The two elements of effective storytelling I used when creating this presentation were visual hierarchy and a clear narrative structure. Visual hierarchy is the arrangement of visual elements in a way that guides the viewer’s attention to the most important information first. I used visual hierarchy in my presentation by providing more space on the page for representations that conveyed the most important information.

In addition to visual hierarchy, I also used a clear narrative structure to engage the audience. Narrative structure refers to the way that a story is organized and presented to the viewer. To do this, I organized my representations into a Tableau Story to create a clear path that guided the viewer through the data in a logical and easy-to-follow manner.

## Section 10: Installation Instructions

As mentioned in Section 8: Universal Access, no installation is required to view the dashboard. Simply click or copy & paste the following link into your browser to access the dashboard on Tableau Public: <https://public.tableau.com/views/D210_16835099698110/StoryHospitalRatings?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link>

## Section 11: Sources

Centers for Medicare and Medicaid (2017). *Hospital Ratings.* Retrieved May 2023, from Kaggle: https://www.kaggle.com/datasets/center-for-medicare-and-medicaid/hospital-ratings