Performance Assessment D210 – Representation and Reporting  
Part A

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## A1. Data Sets

My Tableau story dashboards are based on the given medical data set located here: <https://access.wgu.edu/ASP3/aap/content/ds0fh43lkfd9tf85kvmd.zip>

I chose to examine 2 KPIs. The first KPI is for excess hospital readmissions over the level expected by Centers for Medicare & Medicaid Services (CMS). The second KPI is to compare our patients’ Vitamin D blood serum levels compared to the total US population.

To provide data representations of the hospital readmission KPI, I combined the WGU medical data with the CMS Hospital Readmissions Reduction Program (HRRP) data set. The data and associated data dictionary can be found at this website: <https://data.cms.gov/provider-data/dataset/9n3s-kdb3>

To provide data representations of the Vitamin D KPI, I combined the WGU medical data with the 2017-2018 National Health and Nutrition Examination Survey (NHANES) performed by the Centers for Disease Control. I used the Demographics data from NHANES found at <https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Demographics&Cycle=2017-2018> and combined it with the Vitamin D data set from NHANES found at <https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Laboratory&Cycle=2017-2018> [scroll down to ‘Vitamin D’].

I prepared, cleaned, and unified the data from these datasets using the Python code in the attached Jupyter notebook ‘D210\_dataprep.ipynb’.

## A2. Dashboard Installation

Step 1. Acquire the file ‘[unified\_med\_data.twbx](https://westerngovernorsuniversity-my.sharepoint.com/:u:/g/personal/dhaunsp_wgu_edu/Ee9lHHTjmiBIrhPNhARLG28B5Wa67q_b5Tli8Ehf4poqDw?e=m6VsRs)’ from my task submission. Alternately, download it from this link: <https://westerngovernorsuniversity-my.sharepoint.com/:u:/g/personal/dhaunsp_wgu_edu/Ee9lHHTjmiBIrhPNhARLG28B5Wa67q_b5Tli8Ehf4poqDw?e=m6VsRs>. Save it to your local workspace where Tableau Desktop can access it.

Step 2. Open Tableau Desktop

Step 3. Click ‘File’, then ‘Open’

A screenshot of a computer

Description automatically generated

Step 4. From the Open File dialog, navigate to where the unified\_med\_data.twbx is saved and select it, then click ‘Open’.

A screenshot of a computer program

Description automatically generated

Step 5. This should load the Intro page of my Story. If not, please select the ‘D210’ Story page along the bottom and click the ‘Intro’ page caption box.

A screenshot of a computer

Description automatically generated

Step 6. The two KPI dashboard pages can be accessed by clicking their respective page caption boxes.

## A3. Dashboard Navigation

### Hospital Readmission Rates

On the ‘Hospital Readmission Rates’ dashboard page, the user is presented with 4 maps, and in the center, the overall KPI figure for excess readmissions in our hospital system vs nationwide predicted rates by CMS. This indicates that our hospital system’s readmission rate is over 20 percentage points higher than CMS would predict.

The top left map shows CMS’ predicted hospital readmission rate for each state (or region, when the bottom left map is used to highlight). The top right map shows our system’s readmission rate for each state or region. These maps are both colored using the ‘Blue’ palette in Tableau but with the range adjusted to show that the CMS values are much lower (lighter blue) than our system’s values (darker blue).

The bottom two maps show the difference or excess readmission rate between our results and the CMS predictions. The bottom left map shows the data grouped by region for our regional VPs, while the bottom right map shows state-level data for further drill-down. Any of the regions or states can be clicked on to highlight their data in the selected map as well as the corresponding data in the top maps. The maps can be interacted with individually (dragging to pan, scrolling the mousewheel to zoom, etc.). Please note that if the Pacific Coast region is selected, its data marker shows over the state of Alaska in all maps, so the map should be zoomed out enough to see that.

### Vitamin D Control

This dashboard shows our patient’s Vitamin D levels (bottom) compared to a national sample from the NHANES survey (top) in histogram format. Floating over the bottom histogram is the KPI of median Vitamin D blood serum level for the selected population. The histograms are colored by gender. They are also broken up by age (20 year bins) which can be highlighted together using the Highlight Age (bin) tool at the bottom right. In addition, multi-selections filters exist for Age, Marital status, and Income level. The income bins were chosen to match those in the NHANES data, and null Marital status was kept, since a large proportion (3685 / 9254) of the NHANES respondents had missing data for this variable (see CDC NHANES DEMO\_J data dictionary file)..