A: Data Dashboards

The dashboard "Hospitalization Insights: Costs, Length of Stay, and Readmission Rates by Age, Gender, Risk, and Condition" supports executive decision-making for hospital administrators. The data aligned in the dashboard will allow anyone in charge of a department, a facility and executives in other areas of the hospital to make decisions around how to address readmission rates that are rising across the nation. The dashboard is composed of two datasets that support analysis of readmission rates as well as how patients view their hospital stay overall.

A1: Datasets and Dashboard File

Use of WGU provided data, medical data file, as well as a companion data set, hospital data analysis, from Kaggle ([www.kaggle.com)](http://www.kaggle.com)) were used to provide meaningful analysis. Both datasets support the creation of the Hospitalization Insights dashboard for executive decision-making with data around patient hospitalization. Fields such as whether a patient was readmitted within 30 days of their last hospitalization or condition they were hospitalized. Other factors such as the length of time hospitalized, procedures patients had performed, as well as their age, gender, and costs around hospitalization aid in building a picture of what is occurring in the hospital for stakeholders to use in decision-making.

A2: Dashboard Installation

The step-by-step instructions to open a functional dashboard are provided here to aid in stakeholder use no matter what their level of experience is with Tableau. The steps include using Postgres SQL, importing data from our companion data set, and create a custom SQL statement in Tableau at the high level.

The Tableau dashboard is provided in .twbx format and is attached (D211 TAustin). After opening the Tableau file as well as the companion dataset (hospital data analysis.csv) perform the following:

1. Using Labs on Demand open pgAdmin, navigate to the medical\_data database
2. Add a table to the medical\_data called hospital data analysis using the following query

**CREATE TABLE public."hospital data analysis"**

**(**

**"Patient\_ID" text COLLATE pg\_catalog."default" NOT NULL,**

**"Age" integer,**

**"Gender" text COLLATE pg\_catalog."default",**

**"Condition" text COLLATE pg\_catalog."default",**

**"Procedure" text COLLATE pg\_catalog."default",**

**"Cost" numeric,**

**"Length\_of\_Stay" numeric,**

**"Readmission" text COLLATE pg\_catalog."default",**

**"Outcome" text COLLATE pg\_catalog."default",**

**"Satisfaction" integer,**

**CONSTRAINT "hospital data analysis\_pkey" PRIMARY KEY ("Patient\_ID")**

**)**

**TABLESPACE pg\_default;**

**ALTER TABLE public."hospital data analysis"**

**OWNER to postgres;**

**\*\*Be sure to refresh the data by right clicking on Tables and selecting “Refresh” to see the new table**

1. Import data into the created table using the Import/Export wizard
   1. Select Import/Export after right clicking on hospital data analysis

A screenshot of a computer

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* 1. Then select the proper items as shown in the screenshot connected to the red arrows and locate the file to import. File sent separately, labeled hospital data analysis.csv

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Then click ‘OK’

* 1. Process Watcher box will pop up and advise if the import was successful.

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A3: Dashboard Navigation

The instructions to help users navigate the dashboards are listed below.

1. Open Tableau 2021.4 on the desktop
2. To connect to SQL, select More…. Under To a Server on the left side bar
3. Choose PostgreSQL in the third column as shown below

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1. Use the supplied credentials

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1. Locate the file D211\_TAustin.twbx and doble click to open. A custom SQL Warning box will open, select ‘Yes’ to continue.
2. You will see the “Factors that Affect Patient Readmission” (Readmission Factors) story board with three panels across the top.
   * 1. Click on each panel to see information about the two dashboards on each panel.
        1. Average Length of Hospitalization Factors gives information about the average days a patient spent in the hospital based on condition or procedure.
        2. Average Cost of Hospitalization Factors gives information about the cost to a patient based on age and readmission. As well as information on how that relates to patient satisfaction with their hospital stay.
        3. Average Doctor Visit Information provides data around average number of visits from a doctor by gender, patient outcome and admission type.

A4: SQL Code

*All* SQL code or other code supporting the dashboard is in text format below.

Code to create table for hospital data analysis

**CREATE TABLE public."hospital data analysis"**

**(**

**"Patient\_ID" text COLLATE pg\_catalog."default" NOT NULL,**

**"Age" integer,**

**"Gender" text COLLATE pg\_catalog."default",**

**"Condition" text COLLATE pg\_catalog."default",**

**"Procedure" text COLLATE pg\_catalog."default",**

**"Cost" numeric,**

**"Length\_of\_Stay" numeric,**

**"Readmission" text COLLATE pg\_catalog."default",**

**"Outcome" text COLLATE pg\_catalog."default",**

**"Satisfaction" integer,**

**CONSTRAINT "hospital data analysis\_pkey" PRIMARY KEY ("Patient\_ID")**

**)**

**TABLESPACE pg\_default;**

**ALTER TABLE public."hospital data analysis"**

**OWNER to postgres;**

Code to adjust initial\_days variable by rounding

**ALTER TABLE patient**

**ALTER COLUMN initial\_days TYPE integer USING ROUND(initial\_days)::integer**

Custom SQL

**SELECT "patient"."additional\_charges" AS "additional\_charges",**

**"patient"."admis\_id" AS "admis\_id",**

**"patient"."age" AS "age",**

**"patient"."children" AS "children",**

**"patient"."compl\_id" AS "compl\_id",**

**"patient"."doc\_visits" AS "doc\_visits",**

**"patient"."full\_meals" AS "full\_meals",**

**CAST("patient"."gender" AS TEXT) AS "gender",**

**CAST("patient"."hignblood" AS TEXT) AS "hignblood",**

**"patient"."income" AS "income",**

**"patient"."initial\_days" AS "initial\_days",**

**"patient"."job\_id" AS "job\_id",**

**"patient"."lat" AS "lat",**

**"patient"."lng" AS "lng",**

**"patient"."location\_id" AS "location\_id",**

**CAST("patient"."marital" AS TEXT) AS "marital",**

**CAST("patient"."patient\_id" AS TEXT) AS "patient\_id",**

**"patient"."population" AS "population",**

**CAST("patient"."readmis" AS TEXT) AS "readmis",**

**CAST("patient"."soft\_drink" AS TEXT) AS "soft\_drink",**

**CAST("patient"."stroke" AS TEXT) AS "stroke",**

**"patient"."totalcharge" AS "totalcharge",**

**"patient"."vitd\_levels" AS "vitd\_levels",**

**"patient"."vitd\_supp" AS "vitd\_supp",**

**"hda"."Patient\_ID",**

**"hda"."Age" as "hda\_Age",**

**"hda"."Gender" as "hda\_Gender",**

**"hda"."Condition",**

**"hda"."Procedure",**

**"hda"."Cost",**

**"hda"."Length\_of\_Stay" AS "hda\_LOS",**

**"hda"."Readmission",**

**"hda"."Outcome",**

**"hda"."Satisfaction"**

**FROM "public"."patient" "patient"**

**LEFT JOIN "public"."hospital data analysis" "hda"**

**ON "patient"."age" = "hda"."Age"**

**AND "patient"."gender" = "hda"."Gender"**

**AND "patient"."initial\_days" = "hda"."Length\_of\_Stay"**

**AND "patient"."readmis" = "hda"."Readmission"**

B: Panopto Presentation

A link to a Panopto multimedia presentation is provided, and the presentation includes *each* of the given elements. https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=c3124ac0-9f78-4a19-a796-b1f60177e5d0