IT370 Final Project

By

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Data Cleaning

Duplicate Entries:

Firstly, in excel file, I searched for any duplicate entries to be deleted duplicate entries because these affects the accurate reporting but, fortunately, there were no duplicate entries in the data.

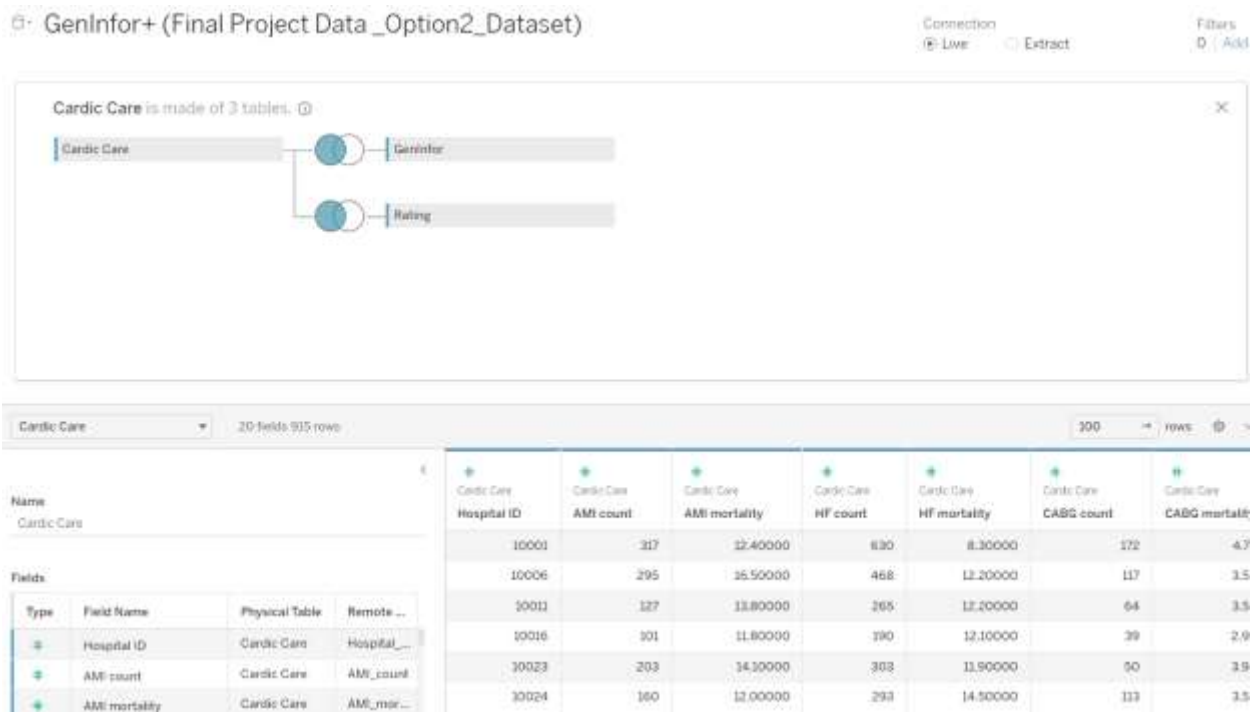
Null Values:

In excel file, I removed all the hospital IDs which have NULL values either in AMI, HF, or CABG count. This limited my data to 915 Hospitals only which treats all three types of cardiac care patients, ie; heart attack, heart failure, and artery bypass surgery.

Hospital_ID	AMI_count	AMI_mortality	HF_count	HF_mortality	CABG_count	CABG_mortality
360180	360	10.9	920	6.6	364	1.4
390195	167	11.4	751	9	312	1.5
340069	445	14	789	11.6	251	1.5
490007	291	12.4	681	12	400	1.6
210063	300	11.6	497	12.4	335	1.6
330182	432	11.4	1446	9.5	456	1.6
220071	445	11.5	1390	8.3	338	1.6

Joins:

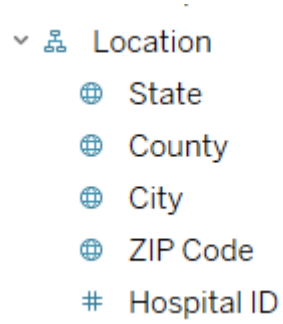
The data is imported in tableau. First, I dragged the Cardiac Care sheet, then I joined ‘GenInfor’ with a left join, meaning include all the entries from Cardiac Care sheet and all matching entries from ‘GenInfor’ Sheet. In the same way I dragged ‘Rating’ Sheet.



Now, we have 915 entries with all data of AMI, HF, CABG, general information and rating of all related hospitals. Only hospitals are included which provide services for patients in AMI, HF, and CABG. With this only one type ‘A’ is left in the data.

Hierarchy:

In tableau data pane, for the easy and understandably, hierarchy for the location is created. Which will be used to drill down to the lower level easily.



Analysis

Sheets

KPIs:

5 separate KPI sheets are creates, the names of the sheets are self-explanatory,

1. Total Patients

   All patients of AMI, HF, and CABG are added to make a total.

2. AMI Patient
3. HF Patients
4. CABG Patients
5. Total Hospitals

   This tells the number of hospitals in the data.

Total Patients	AMI Patients	HF Patients	CABG Patients	Total Hospitals
743,936	209,074	437,624	97,537	915

If no filter applied these KPIs show the total number available in the data.

Hospitals in State:

A filled map is created which shows the total number of hospitals in a state. Filled map is color coded Blue-Teal, from lower (Teal) number of hospital to higher (Blue).

By using the hierarchy, ‘location’, we can drill it down to County, City, or Zip code level. Which will make us able to see rating on any level.

State Rating:

As the name suggests, State rating is average of rating from all the hospitals in state. This is calculated based on an Level of Detail (LOD) calculation;

{FIXED [State]: AVG([Star rating])}

Hospital Rating:

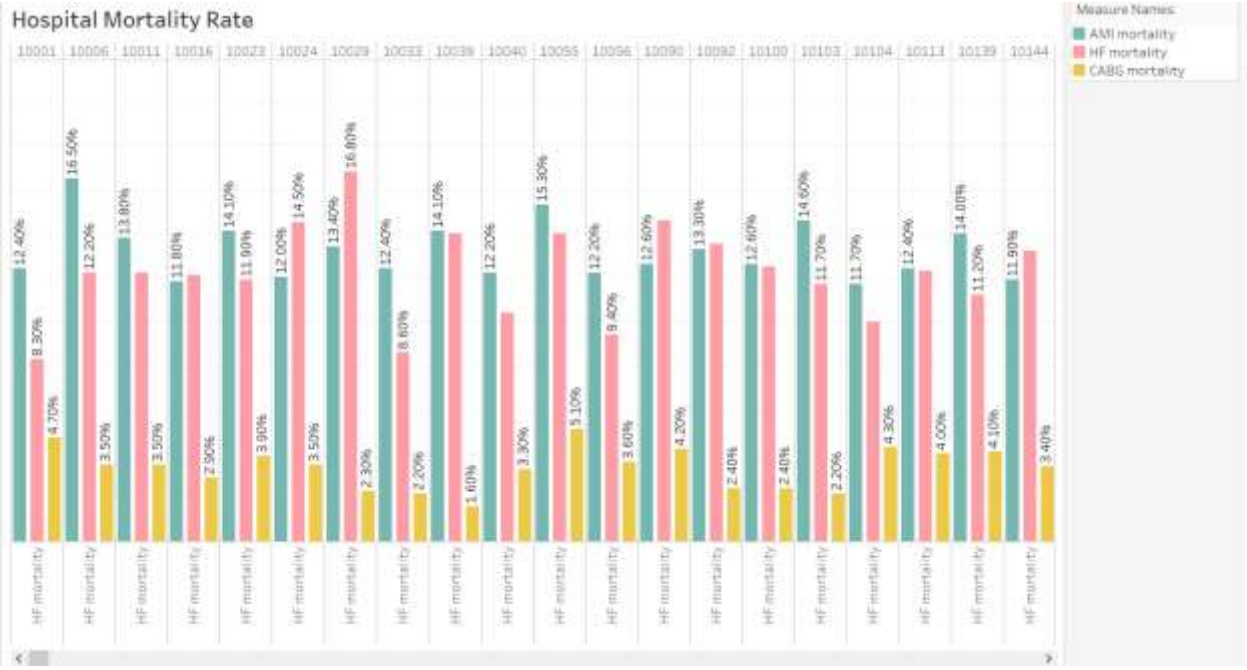
This graph shows the rating of each hospital.

In both, State and Hospital Rating sheets stars are used, where filled star (★) depicts the rating.

Null rating is filtered to be on safe side from biased rating results.

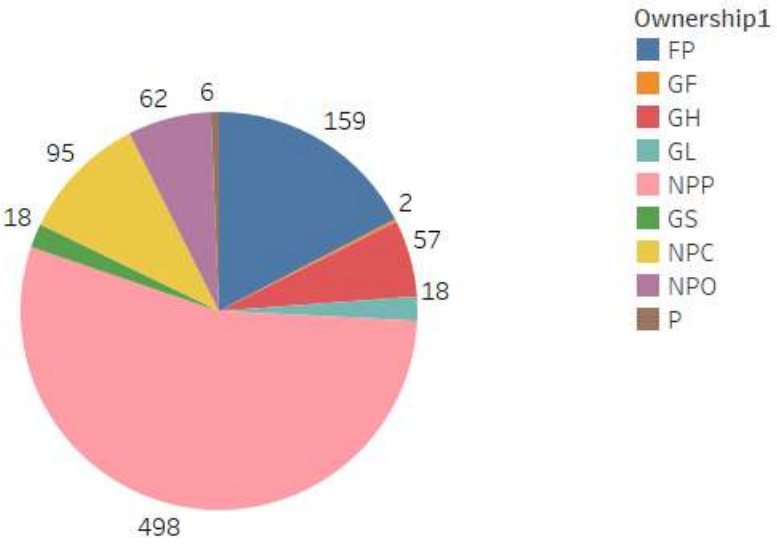
Hospital Mortality Rate:

A side-by-side chart is create to show mortality rate of each hospital. AMI, HF, or CABG patients are color coded to be differentiated easily.



Ownership:

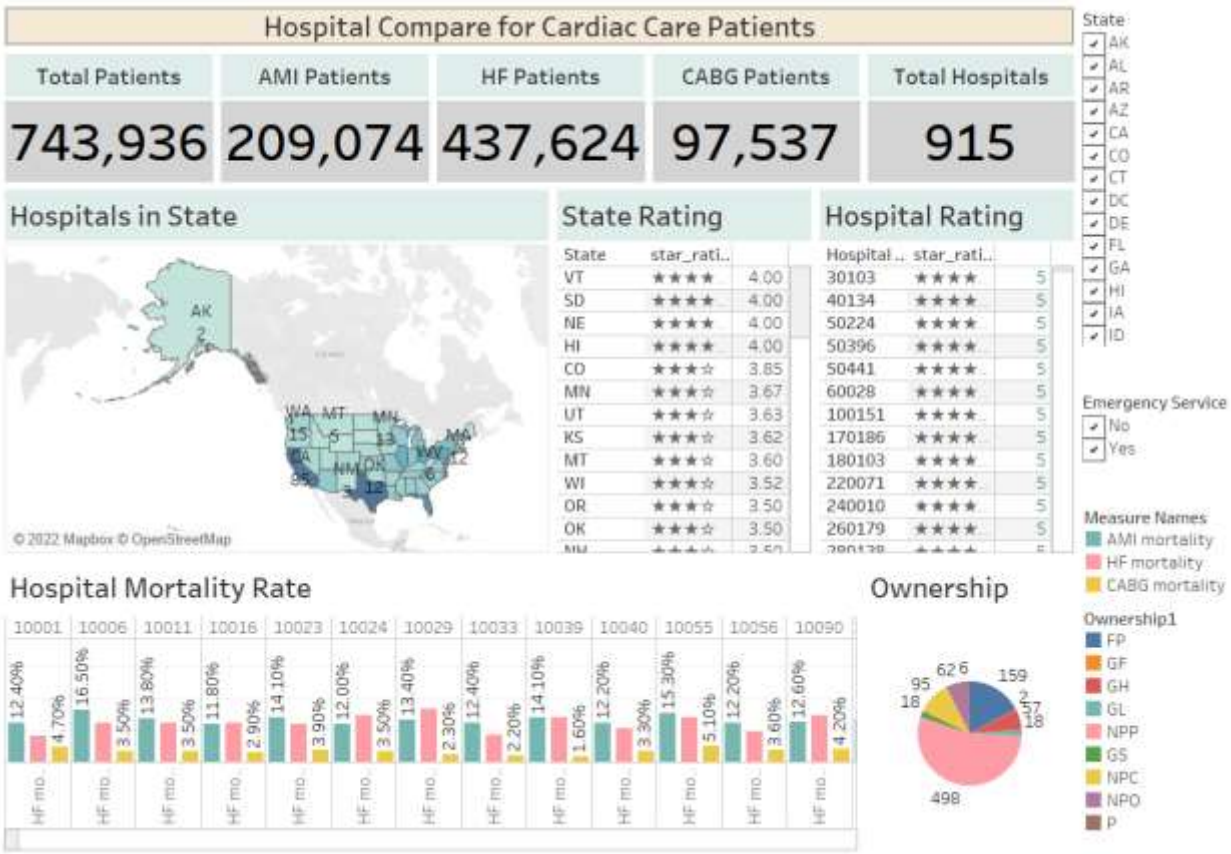
A pie charts showing the data of ownership of the hospitals. It tells the number of hospital owned by each category in the data.



Dashboard

A fully interactive dashboard ‘Hospital Compare for Cardiac Care Patients’ is created from all the KPIs and other sheets.

All the sheets in the dashboard apart from KPIs can be used as filters. If we select state from map of state rating then dashboard will show all the data will be based that state. And likewise all filters will be used. Separate filters are also added which are useful to see data of our choice in the dashboard.



Targeted Audience and the questions answered by the Dashboard

Government:

The dashboard can be used by the government to see the condition of the hospital. It will useful to see the number of hospitals in a state while the number of patients is also visible at the same time.

The dashboard also shows the highest to lowest number of hospitals in a state at first look.

Patients:

The dashboard is useful for the patients to select a best hospital with highest rating and lowest mortality rate.

For both, Government and Patients, Emergency filter is added to check if a hospital provides emergency service of not.

Conclusion

At first look, we can see that the highest number of hospital are in ‘TX’ state, with 36 owned by NPP, followed by 34 by FPP.

This dashboard instantly tells which hospital is best to choose based on rating and mortality rate.