

MSIS670 Mini Project 3

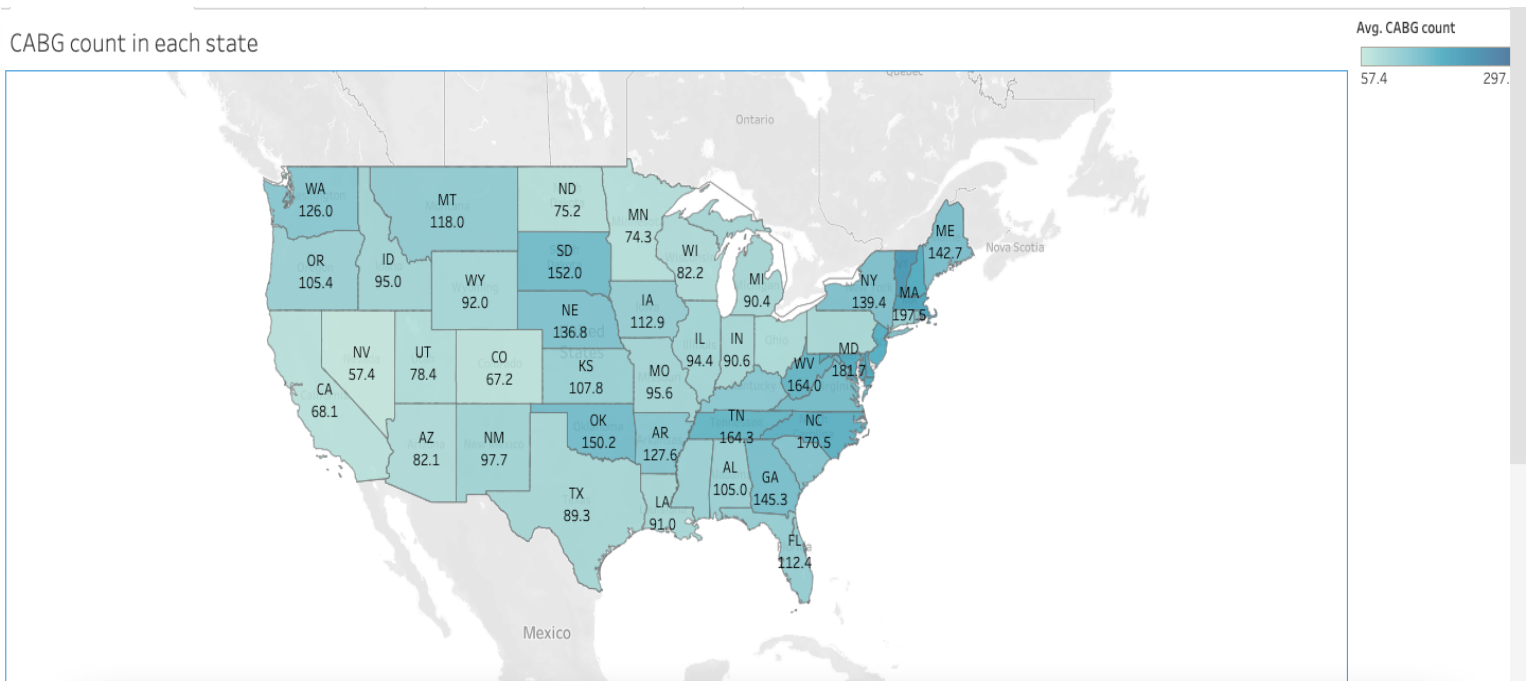
Memo: Understanding Hospital Quality in Coronary Artery Bypass Surgeries.

Dear Potential Patients ,General Public and Medical Authorities.

I am delighted to share an extensive evaluation of hospital care quality derived from rigorous research and thorough data scrutiny. The main objective of this analysis is to offer a comprehensive view of vital hospital performance measures, aiding individuals in making well-informed decisions and choose what suit's the best concerning their healthcare options.

In this exploration of Cardiac Care data , I've used Tableau to generate visuals and derive key insights.

VISUAL 1: FILLED MAP OF AVERAGE CABG COUNT IN EACH STATE

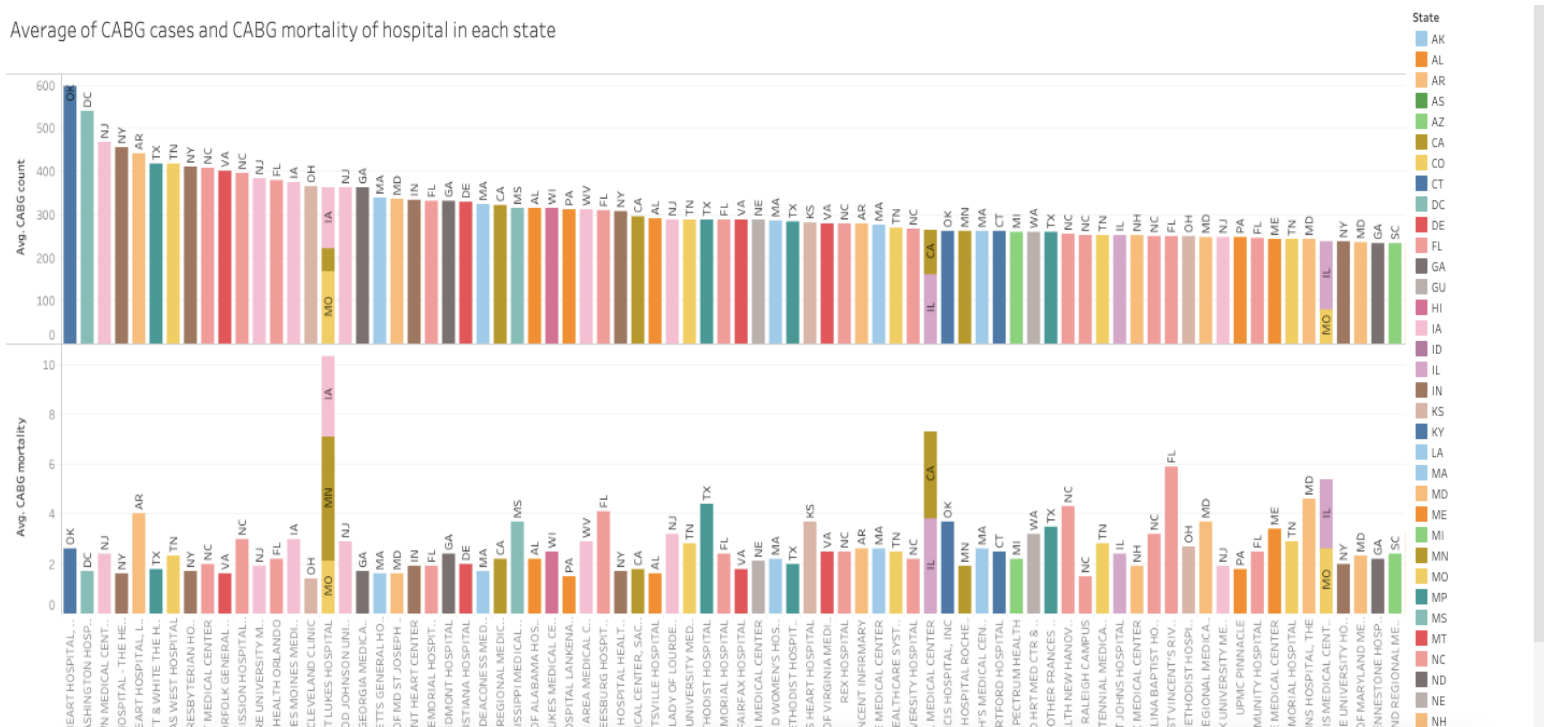


The above map clearly shows the average CABG cases in each state. I've opted to visualize this scenario as this helps in identifying High Demand Areas/States. States with a higher average count of CABG cases might indicate regions with a greater need for specialized cardiac care facilities, potentially guiding the establishment or enhancement of such facilities in these areas.

In this we get a clear idea that MA (Massachusetts) has high rate of CABG cases and NV (Nevada) with the least.

VISUAL 2 : BAR GRAPH OF AVERAGE CABG CASES AND MORTALITY OF EACH HOSPITALS IN EACH STATE.

Average of CABG cases and CABG mortality of hospital in each state



This Bar graph is about the average CABG cases and mortality rates of each hospital and state. This helps the comparison between the hospitals and states.

Helps patients and their families make more informed decisions about where to seek cardiac care by considering both case volumes and mortality rates.

Understanding the correlation between CABG case averages and mortality rates helps in assessing the quality of care provided by hospitals. Lower mortality rates associated with higher case averages may indicate better treatment outcomes and quality care.

I've sorted the data in descending order and as we see Oklahoma Heart Hospital, LLC has the highest CABG cases when compared to any other hospital and state. States like Iowa (IA), Minnesota(MN), Missouri(MO) together has the highest CABG mortality rate in St Luke's Hospital.

VISUAL 3 : TEXT TABLE OF HOSPITAL AND THEIR STAR RATING BY PUBLIC.

Hospitals and their star ratings						Avg. Star rating	
Hospital Name	1	2	3	4	5	Grand Total	
A R GOULD HOSPITAL		3.000			3.000		Avg. Star rating <input type="checkbox"/> (All) <input checked="" type="checkbox"/> Null <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 2.5 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 3.689655172 <input type="checkbox"/> 4 <input type="checkbox"/> 5 State <input type="checkbox"/> (All) <input type="checkbox"/> Null <input type="checkbox"/> AK <input type="checkbox"/> AL <input type="checkbox"/> AR <input type="checkbox"/> AS <input type="checkbox"/> AZ <input type="checkbox"/> CA <input type="checkbox"/> CO <input checked="" type="checkbox"/> CT <input type="checkbox"/> DC <input type="checkbox"/> DE <input type="checkbox"/> FL <input type="checkbox"/> GA <input type="checkbox"/> GU
ALICE PECK DAY MEMORIAL HOSPITAL		ME	4.000		4.000		
ANDROSCOGGIN VALLEY HOSPITAL		3.000			3.000		
		NH			NH		
ANNA JAKES HOSPITAL		3.000			3.000		
		MA			MA		
BAYSTATE FRANKLIN MEDICAL CENTER		3.000			3.000		
		MA			MA		
BAYSTATE MEDICAL CENTER		3.000			3.000		
		MA			MA		
BAYSTATE NOBLE HOSPITAL		3.000			3.000		
		MA			MA		
BAYSTATE WING HOSPITAL	2.000				2.000		
	MA				MA		
BERKSHIRE MEDICAL CENTER	2.000				2.000		
	MA				MA		
BETH ISRAEL DEACONESS HOSPITAL - MILTON		3.000			3.000		
		MA			MA		
BETH ISRAEL DEACONESS HOSPITAL - NEEDHAM		3.000			3.000		
		MA			MA		
BETH ISRAEL DEACONESS HOSPITAL PLYMOUTH		3.000			3.000		
		MA			MA		

In this text tables I've compared the hospitals in New England states with their star ratings. I've filtered and used only New England states (CT, ME, MA, NH, VT, RI) as we can see the majority of the cases are registered in these states.

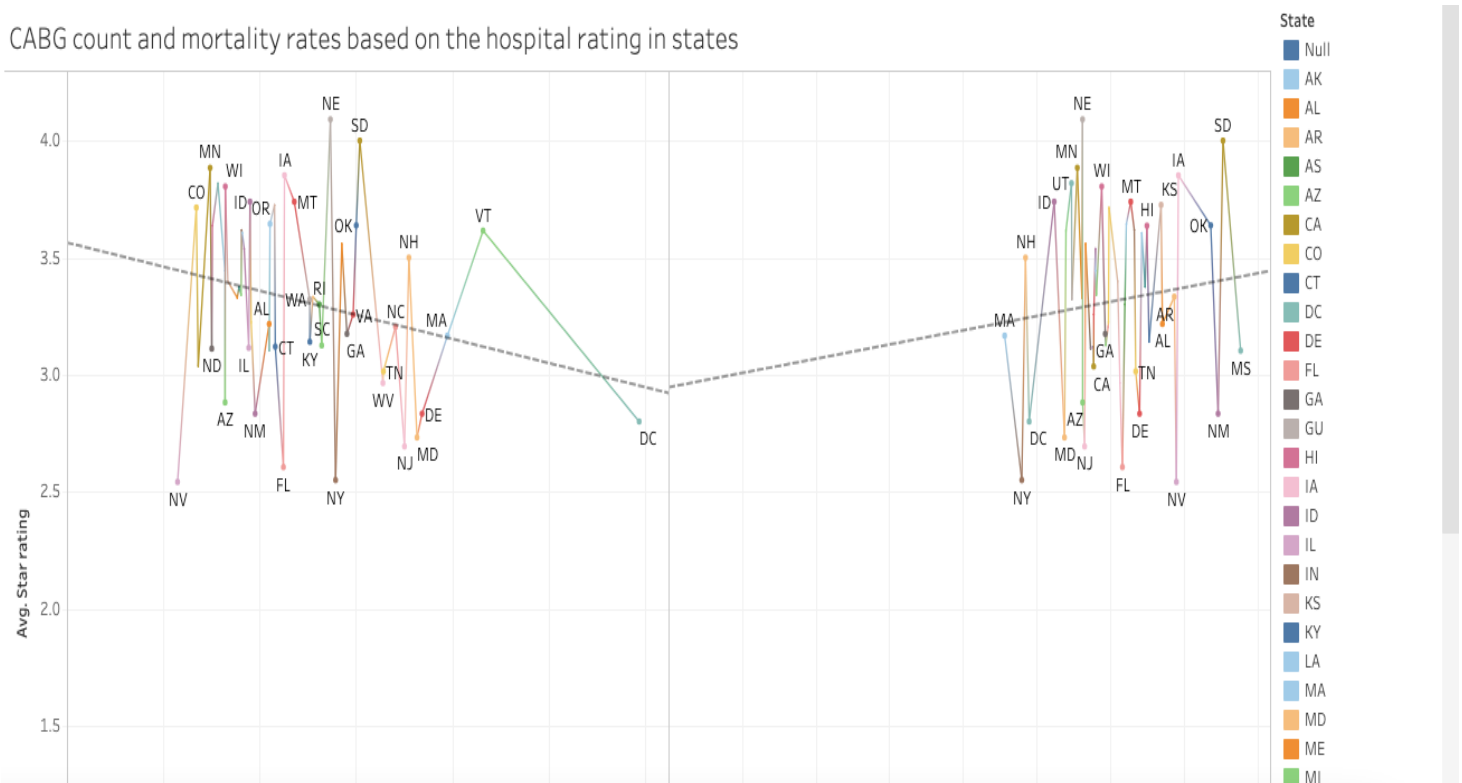
To minimize ambiguity, I've filtered the ratings to be from 1-5 removing extra decimals.

It also provides a direct comparison of hospitals based on their star ratings. This comparison helps patients understand which hospitals are rated higher or lower in terms of patient satisfaction.

It allows medical authorities to benchmark hospitals against each other in terms of patient satisfaction, encouraging lower-rated hospitals to analyze and improve their services.

VISUAL 4: LINE GRAPH OF CABG COUNT AND MORTALITY RATE BASED ON HOSPITAL RATINGS IN EACH STATE.

CABG count and mortality rates based on the hospital rating in states



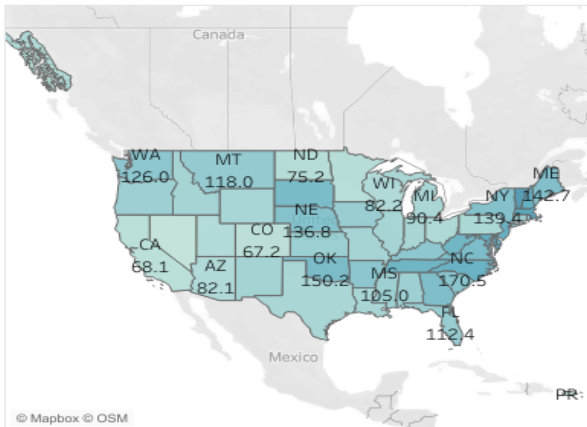
The graph visualizes how hospital ratings correlate with both CABG case counts and mortality rates. Identifying any trend can provide insights into the quality of care associated with different hospital ratings.

With the help of this data, it helps public in understanding how hospital ratings align with actual outcomes aids in assessing the effectiveness of these ratings in reflecting quality of care.

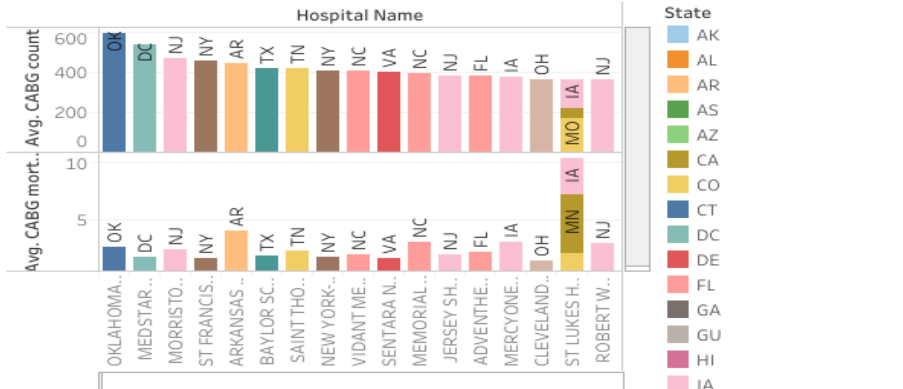
I have also used Trend lines help visualize patterns and tendencies within data, making it easier to identify upward, downward, or stable trends over time or across variables. With the help of trend lines public can make predictions about future data points or outcomes based on historical trends, facilitating forecasting in certain scenarios.

DASHBOARD

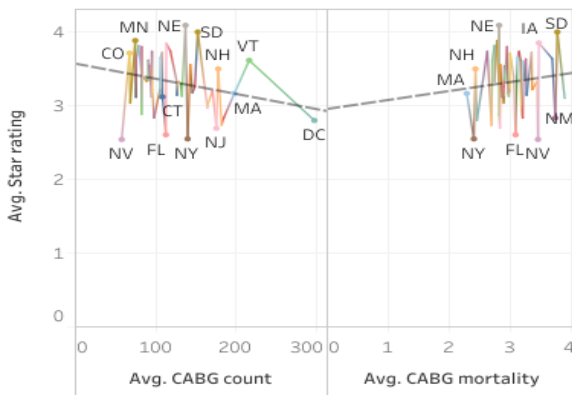
CABG count in each state



Average of CABG cases and CABG mortality of hospital in each state



CABG count and mortality rates based on the hospital rating in states



Hospitals and their star ratings In New England States



This Dashboard main purpose is to create an interactive platform for the users and for public. I've made this dashboard interactive by adding a filter action on the filled map worksheet.

By using this action, we can select a particular state and the whole dashboard provides us the information related to that state which helps the public to clearly understand the information.

This overall dashboard provides the information for the users about the best hospitals based on their ratings, hospitals and their mortality and CABG cases in each state and CABG cases in each state in a single click making it easier for them to opt medical services in future.

SUMMARY: The analysis aimed to provide valuable insights into hospitals' performance in delivering coronary artery bypass graft (CABG) surgeries. Leveraging data from multiple sources, this study facilitated informed decision-making for both potential patients seeking cardiac care and healthcare authorities responsible for service improvements.

Hereby I attach my tableau workbook link for better understanding.

<https://prod-useast-b.online.tableau.com/#/site/msis670fall2023/workbooks/1082812>

Thank you.

Meghana Aravala.