BUSINESS AND DATA ANALYSIS PROJECT

IN US HOSPITAL CHARGES DATA

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I. INTRODUCTION

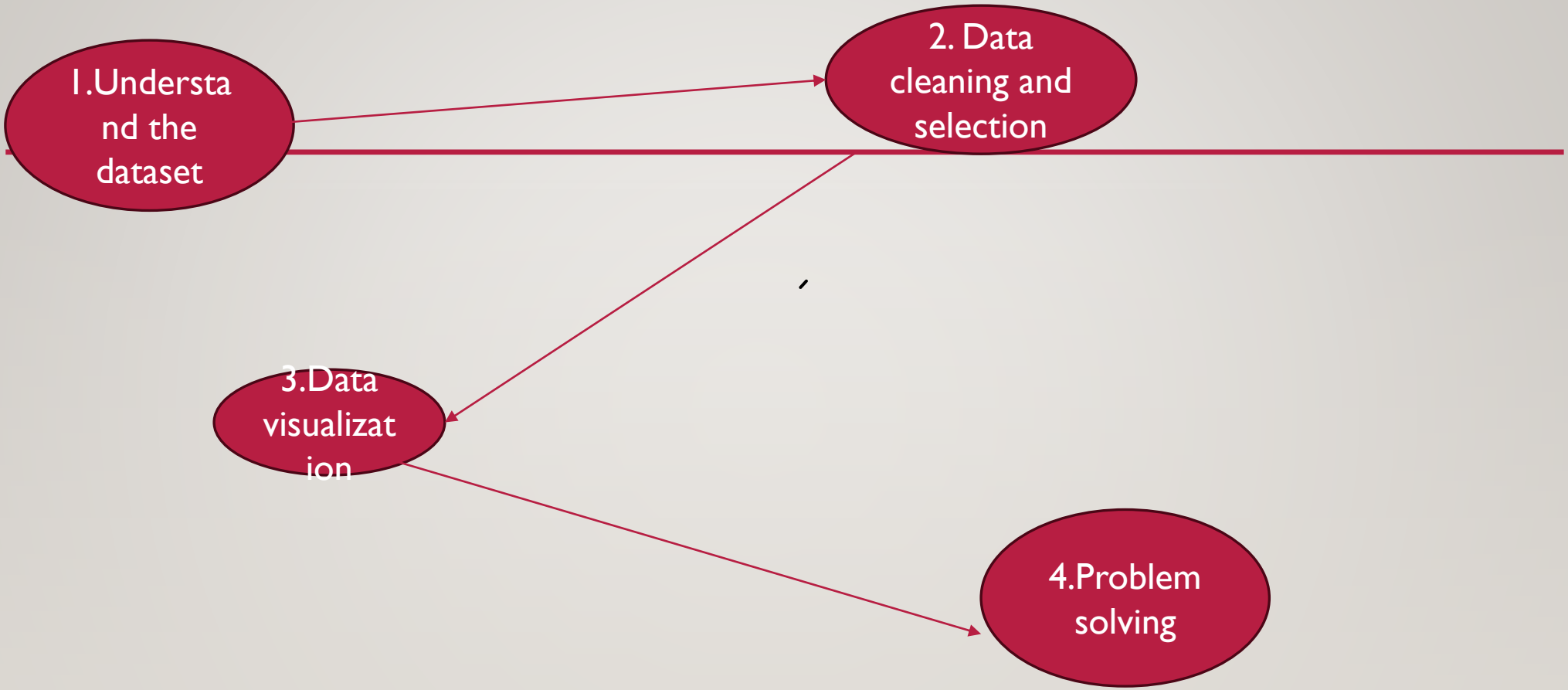
- In this exploration of USA hospital charges and their analysis, we delve into the multifaceted world of healthcare economics. By examining the intricate web of factors contributing to hospital billing, we aim to uncover the underlying dynamics that shape the financial aspects of healthcare. This analysis not only offers a clearer understanding of how healthcare services are priced but also raises important questions about accessibility, affordability, and the potential for reform within the American healthcare system.

2. PROBLEMS

1.WHICH STATE WITH THE HIGHEST HOSPITAL CHARGE AMONG ALL STATES? HOW ABOUT THE SECOND?

2.WHICH STATE HAS THE LEAST MEDICARE PAYMENTS AMONG THE WHOLE COUNTRY?

3. IDENTIFY THOSE EXPENSIVE AND COMMON DRG.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WHAT IS THIS DATASET?

This dataset is about some hospitality factors data in USA.

It includes numeric variables like average covered charges, average total payments and average Medicare payments.

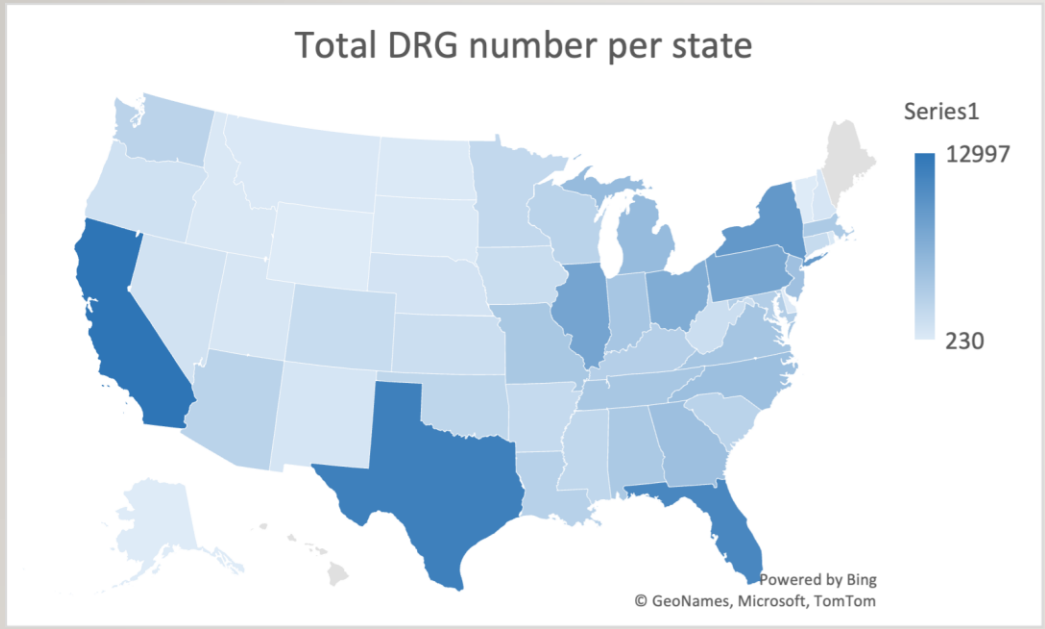
And some variables like providers id, states, addresses, DRG definition, etc.

CLEANING

- Since there are several blanks inside the raw dataset, we remove them firstly.
- Then we remove several duplicated rows indicating variable names.

SELECTION

- Not all variables are meaningful for us, we should select some and focus on interesting topics.
- DRG definition is what we wish to step in as it can showed some information that we might need.
- Provider analysis will also play a role in this project, as state-level comparison will also tell us a lot.
- Finally, combing those with numeric variables.



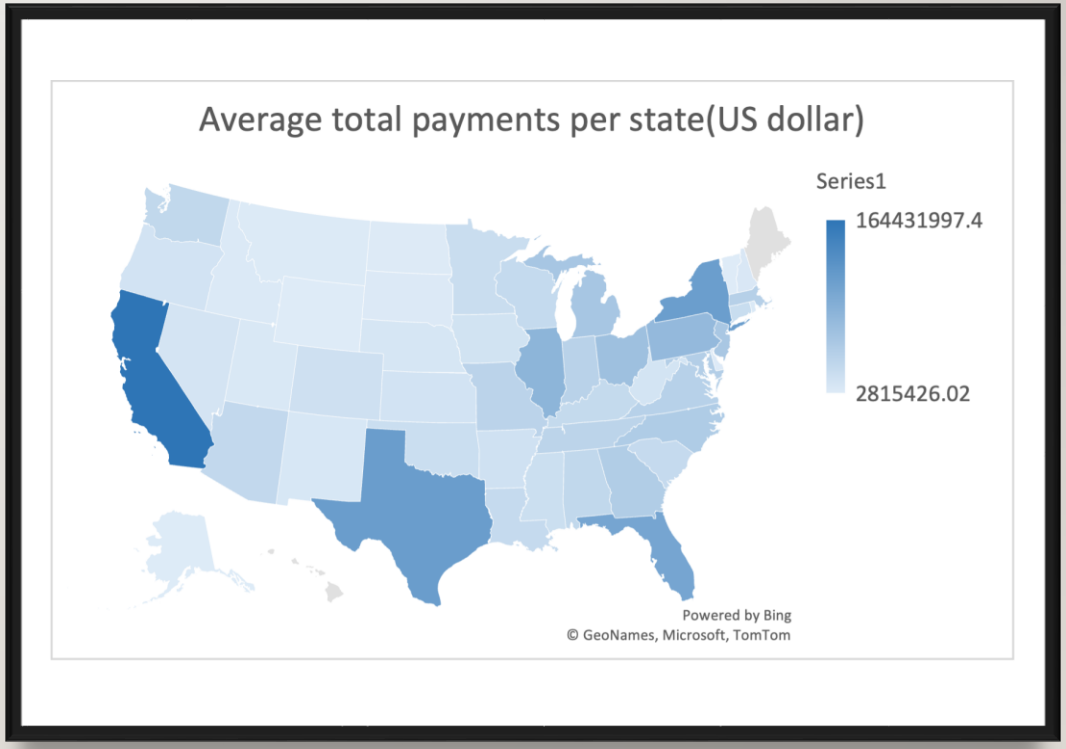
TOTAL DRG NUMBER PER STATE

From this map, we can view the total number of DRG In each state. It detonated by population obviously. California and Texas are leading, with Florida and New York following.

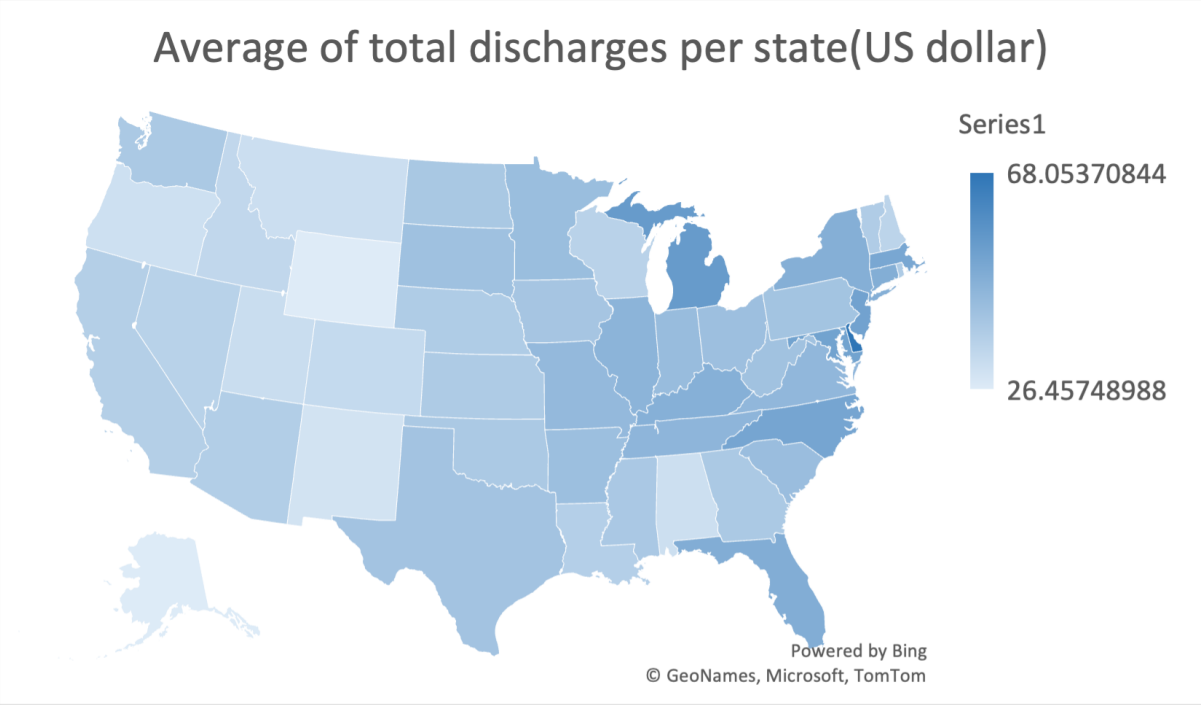
AVERAGE TOTAL PAYMENTS

As we can see from the map, the California tops among all other states for the average total payments, followed by Texas and New York.

Undoubtedly, those are more developed states closing to the seas. With higher price and much better medical conditions.

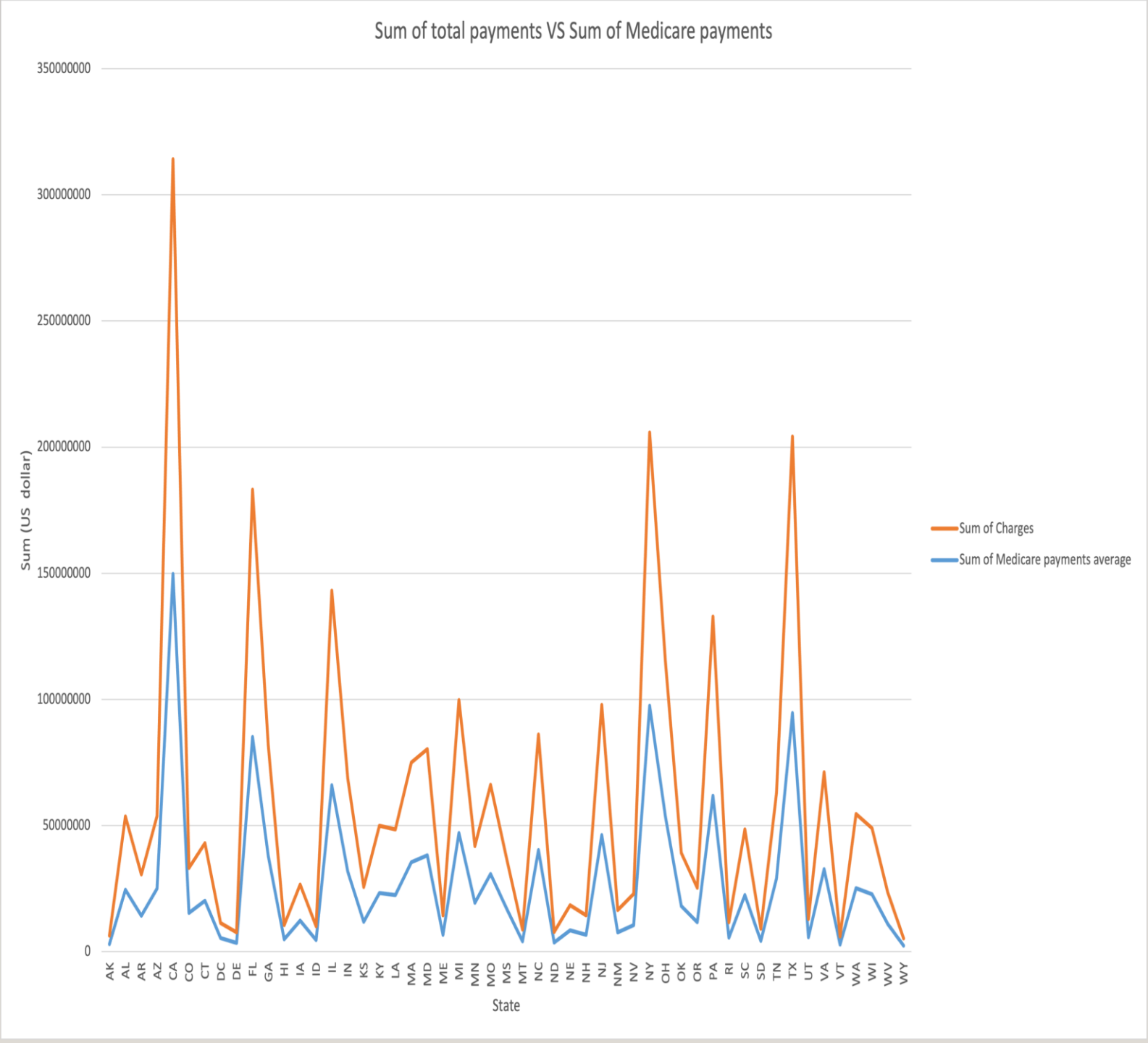


AVERAGE TOTAL DISCHARGES

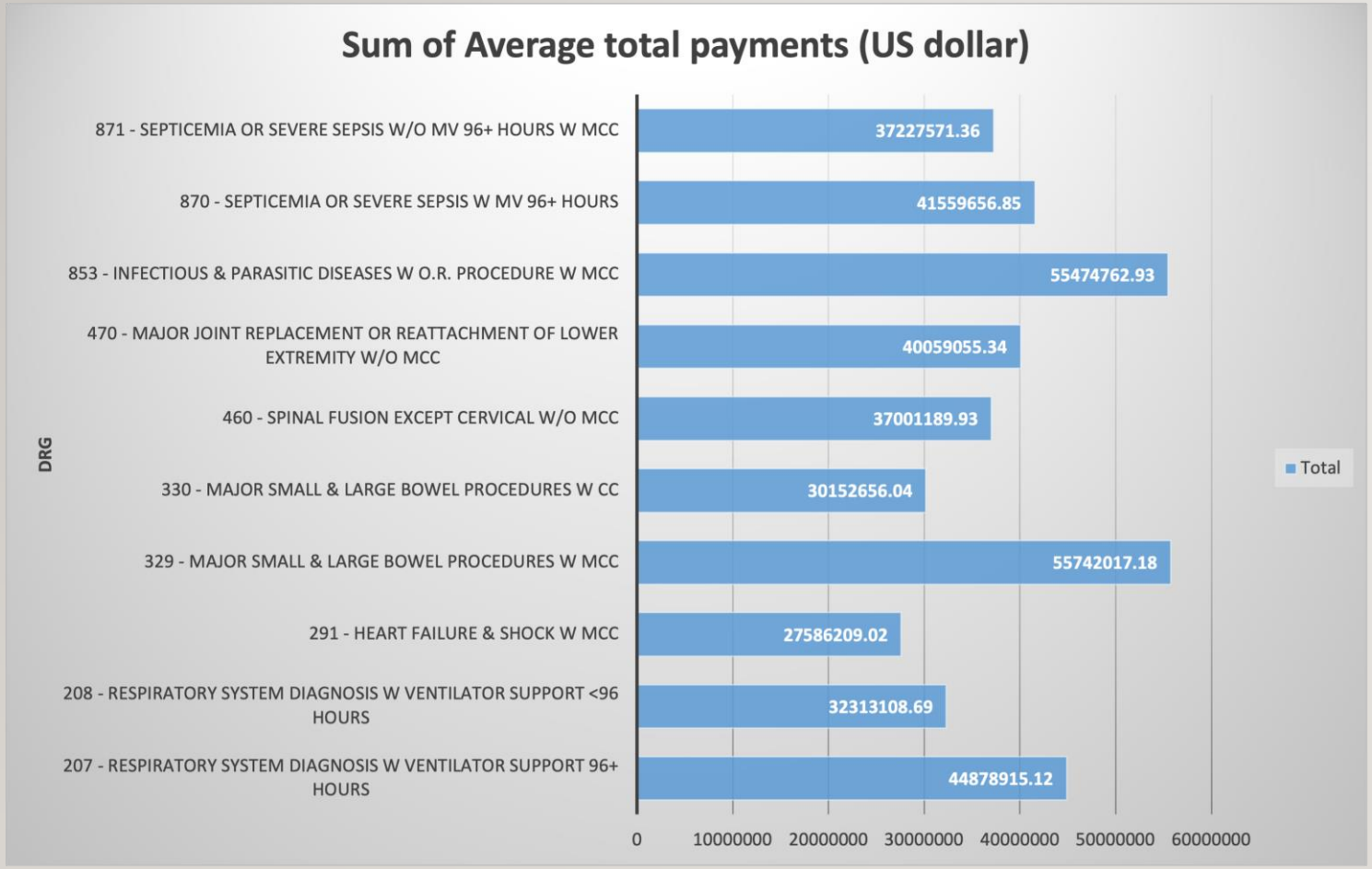


- Apparently, for the total discharges, there is a higher average in the east states like Michigan, New York and Florida then most west states.

TOTAL PAYMENTS VS MEDICARE PAYMENTS



- Now we have the comparison between total and Medicare. Again, California tops and followed by Texas and New York. For the least Medicare state is Wyoming, a state in the mountain with fewer population.

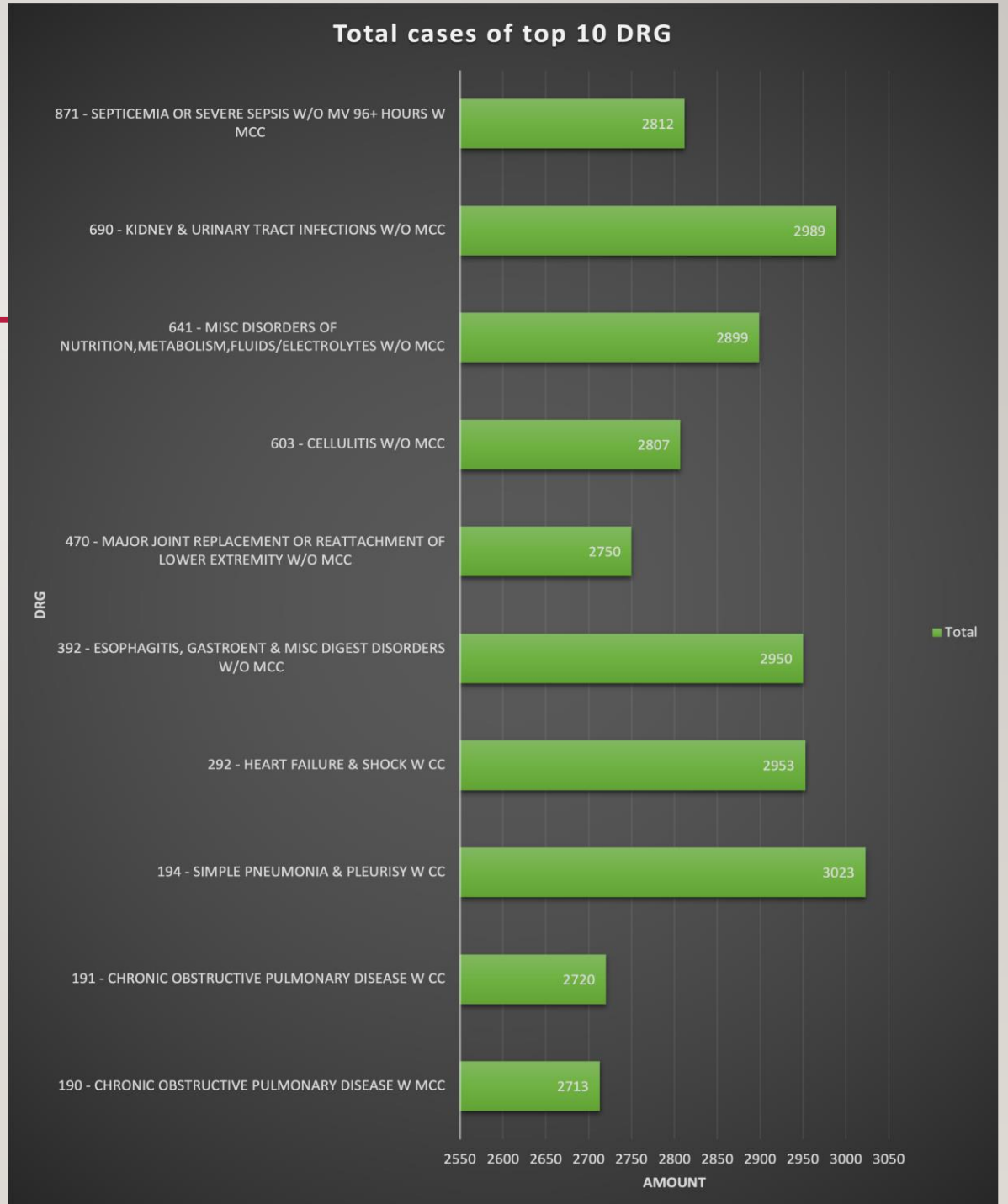


SUM OF AVERAGE TOTAL PAYMENTS IN TOP 10 DRG

- Among all the DRGS, we can clearly find 853 and 329 lead with absolute advantage. Indicating the infectious and digestive diseases affect people more often than others.

TOP 10 CASES OF DRG

- We then look at total cases of top 10 DRG, it is obvious that 690 and 194 take the lead at this time, showing that kidney and lung issues impact people most.
- Meanwhile, there are no 853 and 329 in top 10 cases here. Therefore, we can also say infectious and digestive diseases cost much than others as well.



CONCLUSION

- In conclusion, our project analyzing USA hospital data, incorporating map visualizations, line graphs comparing Medicare payments to total payments, and 2-D bar charts illustrating DRG (Diagnosis-Related Group) definitions, has yielded comprehensive insights into the American healthcare landscape. By amalgamating these data visualization techniques, we have not only uncovered trends and disparities in healthcare expenditure but also provided a nuanced understanding of the role of DRGs in the reimbursement process. This holistic approach to data analysis equips policymakers, healthcare administrators, and researchers with a powerful toolkit to navigate the complexities of the healthcare system. As we move forward, these multidimensional insights will continue to be invaluable in shaping the future of healthcare delivery and policy in the United States.
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