Examining COVID-19 Health Services Use in UCI Health

(Try to choose a catchy title. Max 20 words).

Team Information

Team Name: **Team # on Canvas: 15**	**UCI Health** **15**
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Project Description

Motivation

(Describe the problem you want to solve and why it is important. Max 300 words).

There is a need for an improved understanding of treatment effectiveness for patients based on their age and overall health. We need to utilize data from the UC Data Health Warehouse to examine medication utilization among patients with high-risk comorbidities diagnosed with COVID-19 and correlate with health services utilization to determine which medications work most effectively based on patient characteristics. This is an extremely important task that would help doctors and other medical professionals better treat their patients and prevent reactions to the medicines.

State of the Art / Current solution

(Describe how the problem is solved today (if it is). Max 200 words).

With the COVID-19 pandemic raging on for the past year, the need for good data extrapolation is necessary to see how patients react to certain treatments. Currently, there are no great solutions to this problem because of how new and current the data is. The difference between outpatient and hospital is a glaring issue especially when health experts are trying to understand the current state of patients in the hospitals.

Project Approach

(Describe how do you plan to articulate and design a solution, including platform and technologies to use. Include initial milestones as well. Max 300 words).

Our solution has two main phases, constructing the database and extracting analytics from the cleaned data. The first phase will be us grabbing the relevant data from the UCI Health data warehouse which will then be processed by our scripts. We expect to use Python, SQL, and R to make and add the necessary infrastructure for the database. Some of the milestones we expect for this first milestone are to get access to the data warehouse (there is a little bit of a delay in getting our credentials), to understand what data is relevant to the team, and how we can extract the correct data points with the raw data set.

The second phase of the solution will be creating insights for the data. After organizing and putting the data into a more accessible database, we will then need to understand the trends in the data. We expect to use Python or R to make the data extractions and use Python to create some possible visualizations to show our insights. Some of milestones would be making sure which data points are relevant to us, building out the visualizations, and vetting the data so that it reflects the research correctly.

Project Outcome / Deliverables

(Describe what are the outcomes of the project and how you will conduct a short final demo. Max 200 words).

Our outcomes for this project are to build out a database of health data that will aid the UCI Health team to extract actionable and publishable insights for research. In addition, our team hopes to make data analysis insights that might not be known by the researchers to augment and help them understand the raw data that is coming in from the data sources.
We will conduct a final demo via Zoom. We will be showing our codebase and the raw data sets that we are extracting data from. Then we will show our deliverables and data analytics to show what kinds of insights we made from the data.