COVID-19 Case Surveillance Trends

By Jeremy Silva

The Question

What trends can we extract from the COVID-19 Case Surveillance Data?

The Data

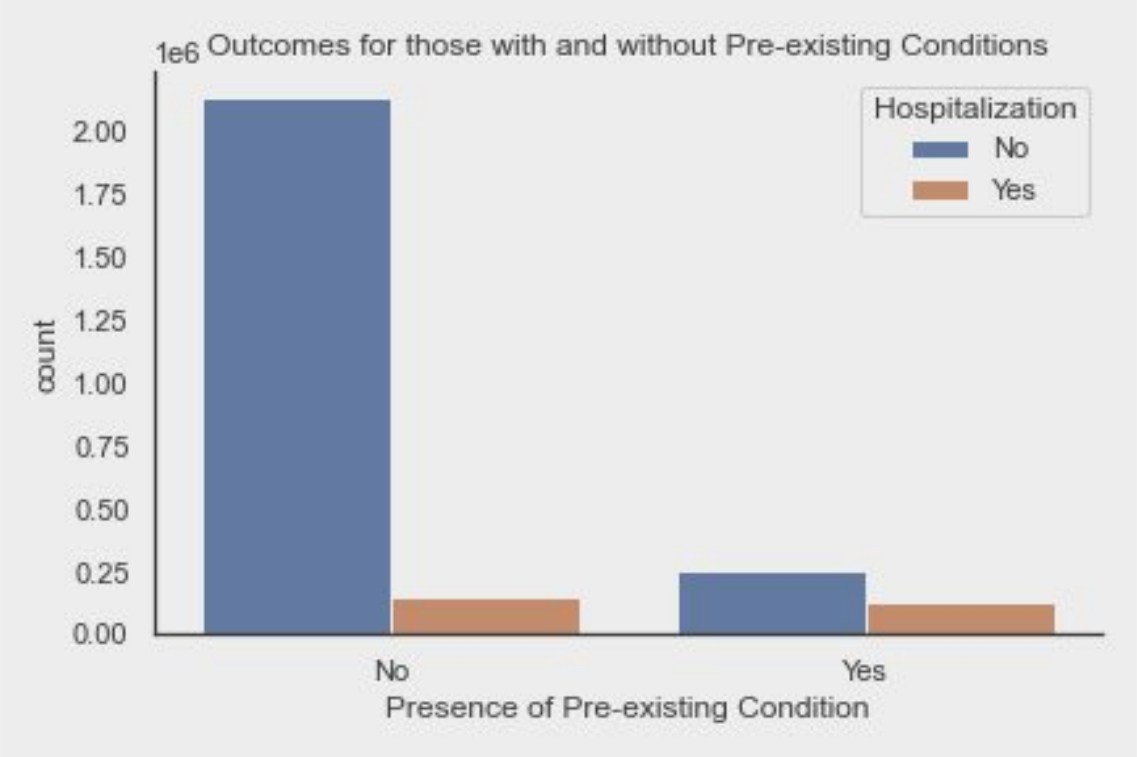
We will be using a dataset published by the CDC that contains data on 2.67 MM U.S. COVID-19 cases. Below are just some of the data fields we have for each patient:

- Sex
- Age Group
- Race and Ethnic Group
- Whether or not they were hospitalized
- Whether or not they were sent to the ICU
- Whether or not they died

Key Findings

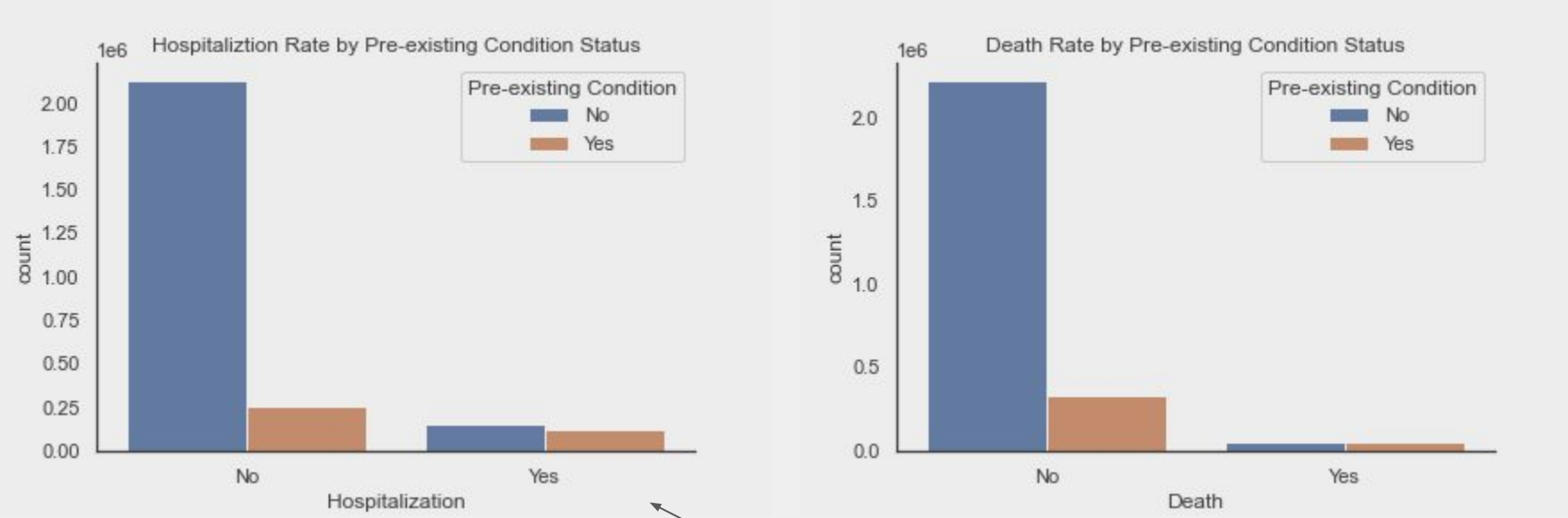
1. Pre-Existing Conditions really do matter
2. Age matters when looking at severity of outcome but not so much when looking at pure infection rate
3. ICU Outcomes are dismal

Pre-existing Conditions



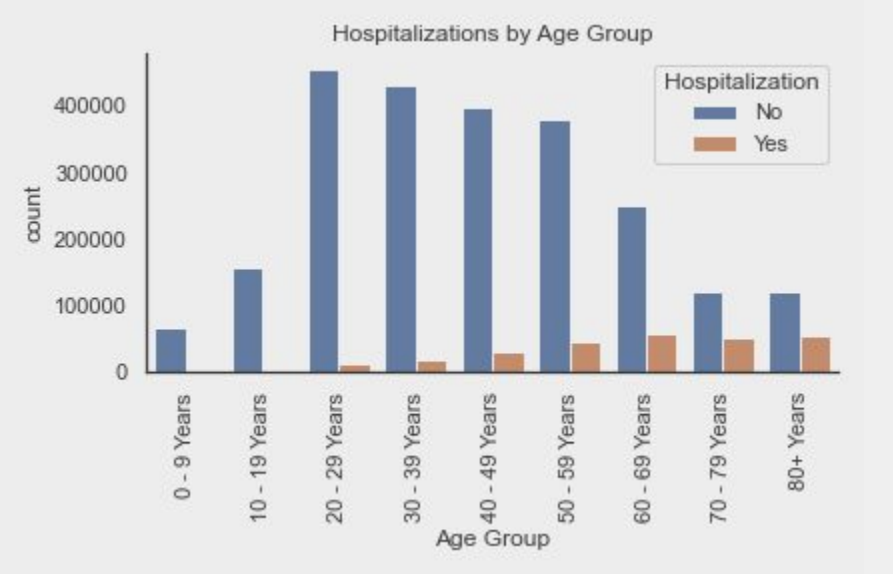
Those with pre-existing conditions are hospitalized at a much larger rate than those without pre-existing conditions

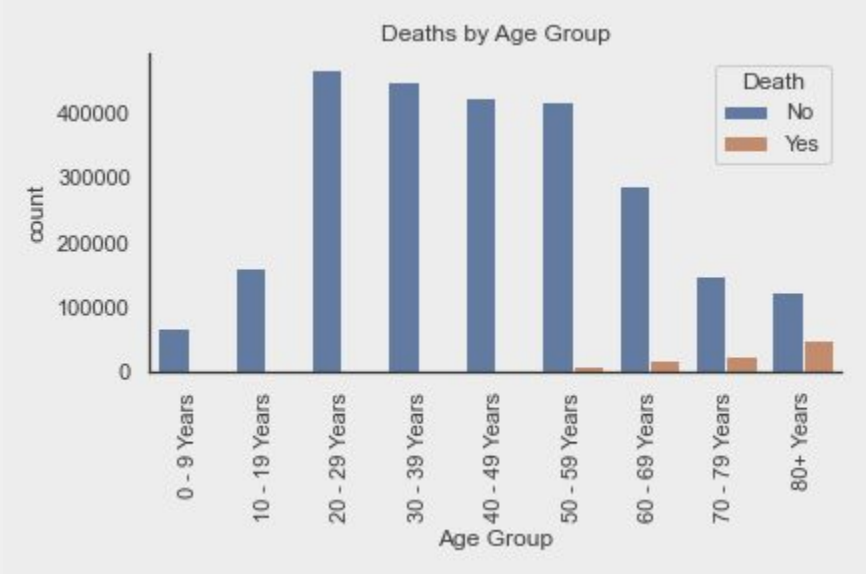
Pre-Existing Conditions



The majority of those hospitalized and those who die have pre-existing conditions

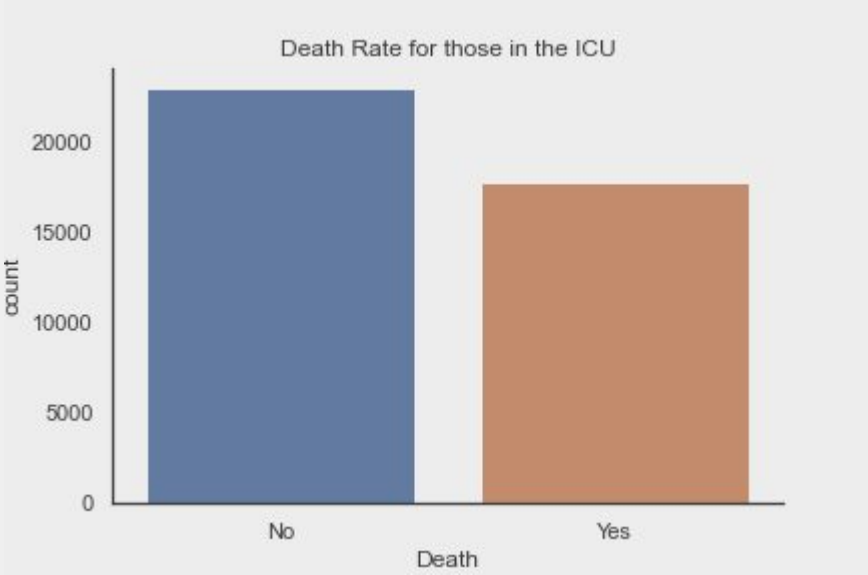
Age





The proportions of those patients who die or are hospitalized increase with age.
Younger people are , however, being infected at a higher rate.

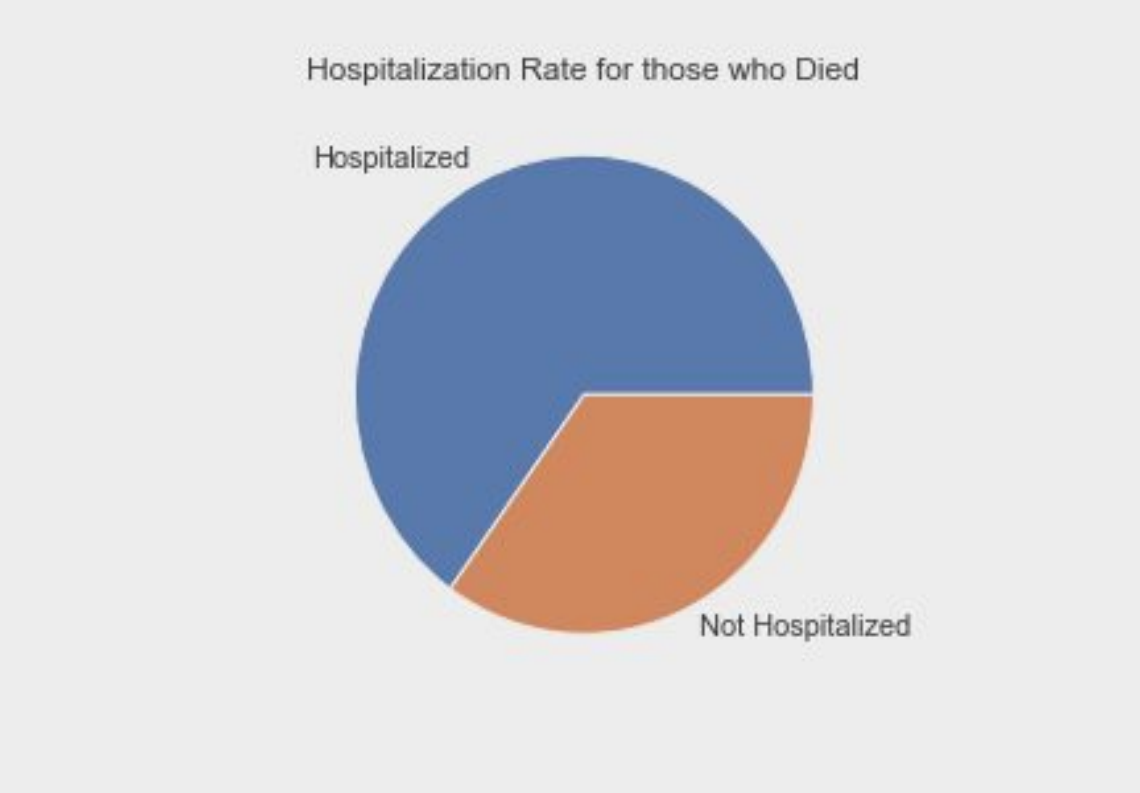
ICU Outcomes



A frightening proportion of patients who enter the ICU end up dying

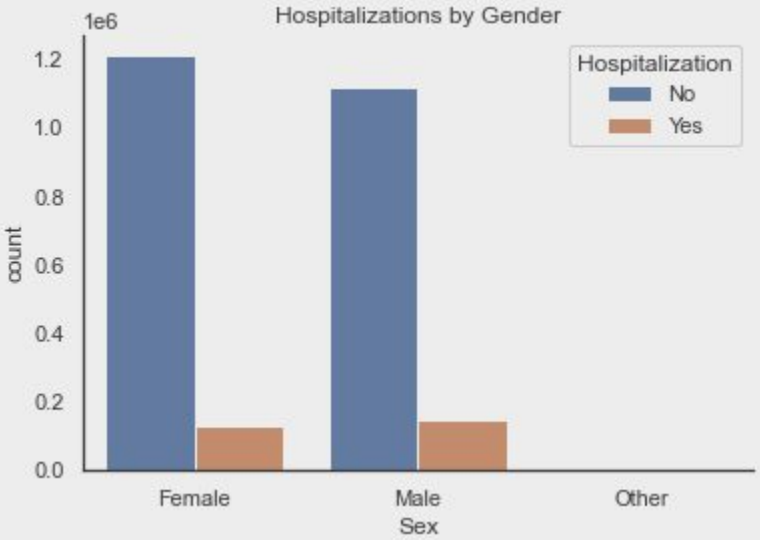
Other Interesting Trends...

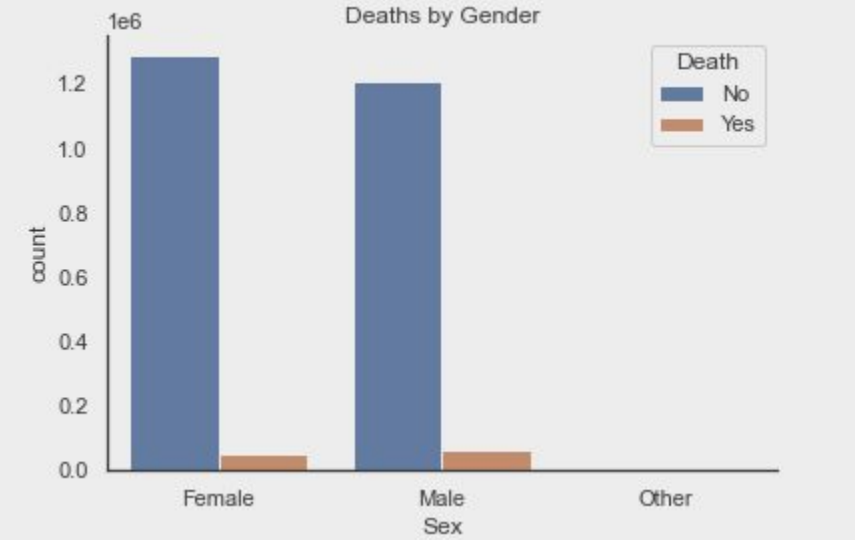
Deaths without Hospitalization



A surprising proportion of patients who ended up dying were never hospitalized

Gender





There don’t appear to be any significant discrepancies in outcome between the genders.