Introduction
Efforts to track the actual mortality burden of COVID-19 has been hampered by lack of testing sites, state-level differences, and delay in reporting. The current mortality numbers may not accurately capture the actual mortality burden of COVID-19.

Objective of the Study
I analyzed trends in excess mortality to estimate the direct and indirect burden of the COVID-19 pandemic on other parameters:
- All Cause
- Cancer
- Cerebrovascular
- Diabetes
- Heart Disease
- Influenza & Pneumonia

Methods
- Create a model to calculate the cumulative excess mortality incidence for each mortality cause from March 20, 2020 to the end of August 2020.
- Analyze correlation between the excess mortality of respiratory disease + COVID-19 (resp+covid) and that of each parameter

Results
- By examining trends in the last 7 years of all cause mortality and flu marker, I modeled the seasonal baseline and predicted the mortality incidence for each state.
- As shown below (for New Jersey), there is a sharp increase in all cause deaths in 2020.
- The area under this peak more accurately captures the actual excess mortality due to COVID-19.

For New Jersey, the actual number of deaths due to COVID-19 is around 17,010 compared to the reported 15,937.

Discussion
- Our results suggest that the excess deaths associated with COVID-19 may be significantly higher than is being currently proposed.
- For further research, I plan on examining the correlation between mortality incidence and average correlation (between each parameter and resp+covid) during the pandemic period.

Questions
Is the excess mortality mainly due to the direct or the indirect effects (social distancing, decrease in hospital visits, etc.) of COVID-19?

Conclusion
- The direct and indirect burden of COVID-19 is significantly higher than is currently being reported. In addition, there is significant correlation between COVID-19 and excess heart disease deaths.

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