

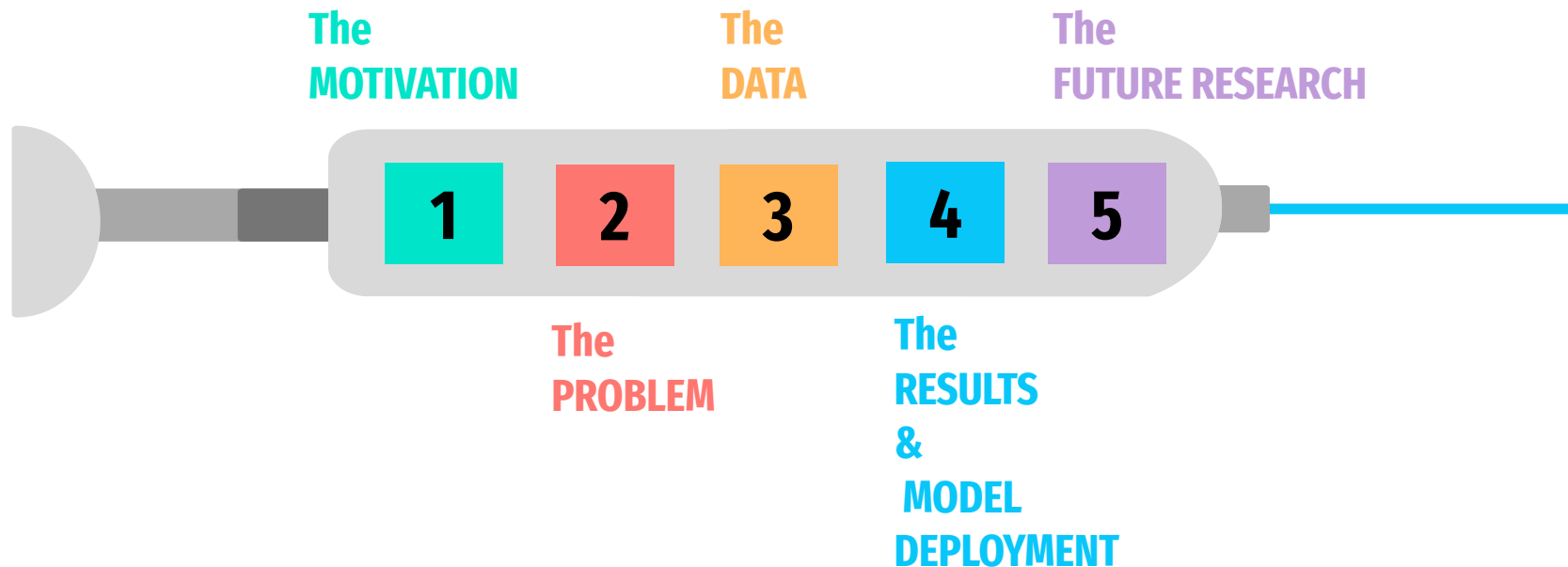
COVID-19 Hospital Stay Predictor

Flatiron Capstone Project

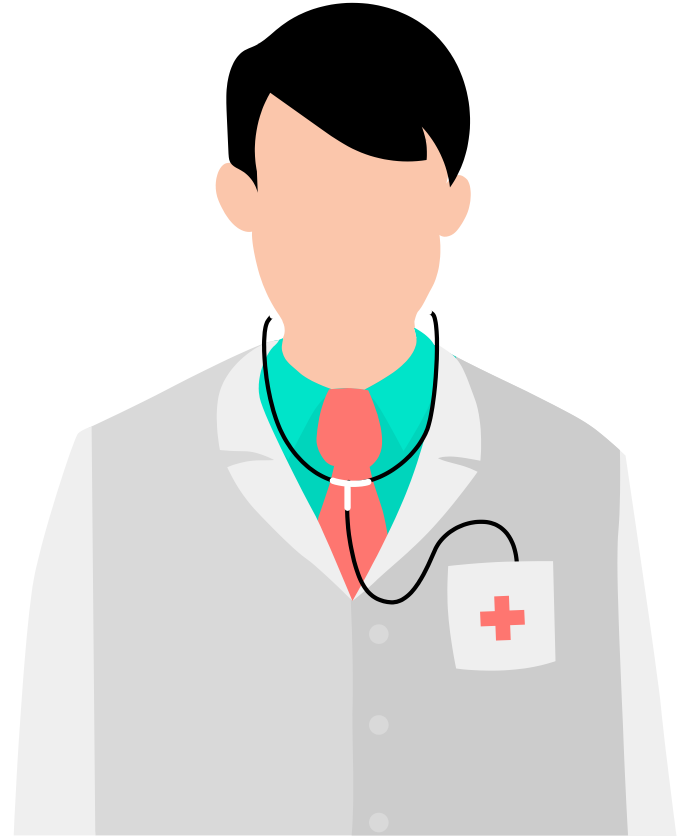
By: Andrew Marinelli



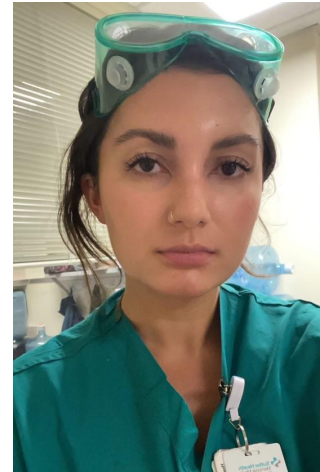
AGENDA



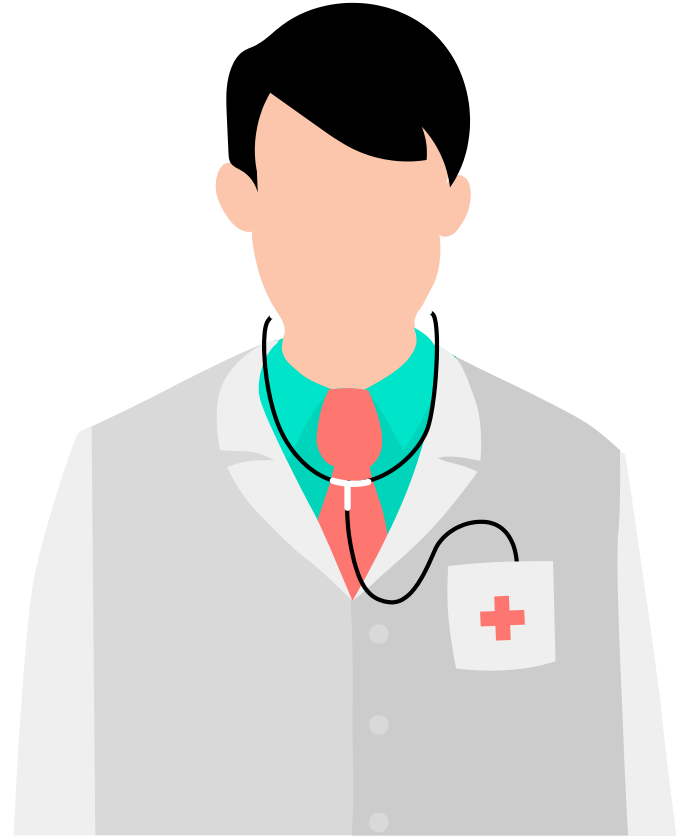
The MOTIVATION



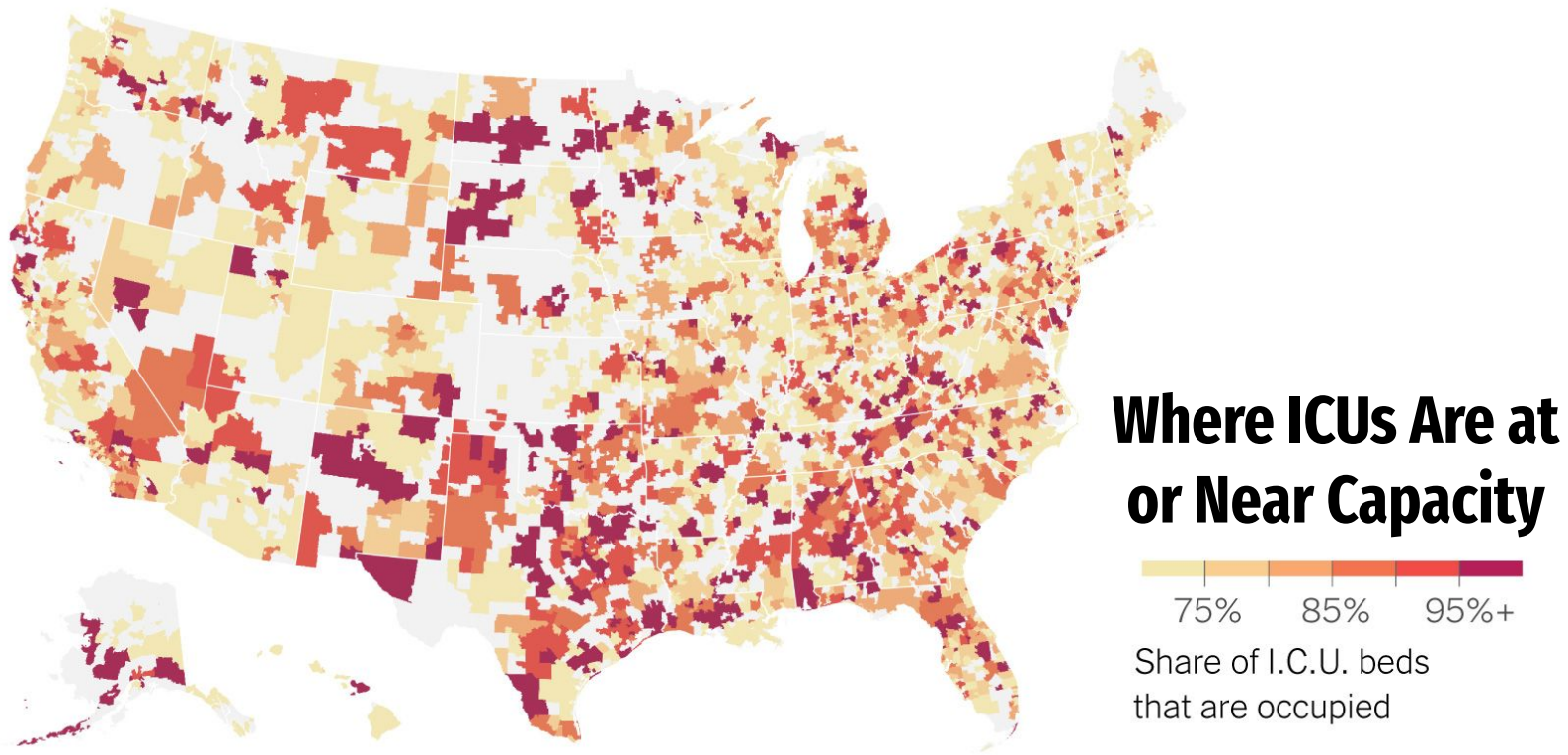
Let's take a step back to March 2020...



The PROBLEM



April 2020 ICU Shortage



April 2020 COVID-19 Excess Deaths Estimated in Model of ICU Bed Availability

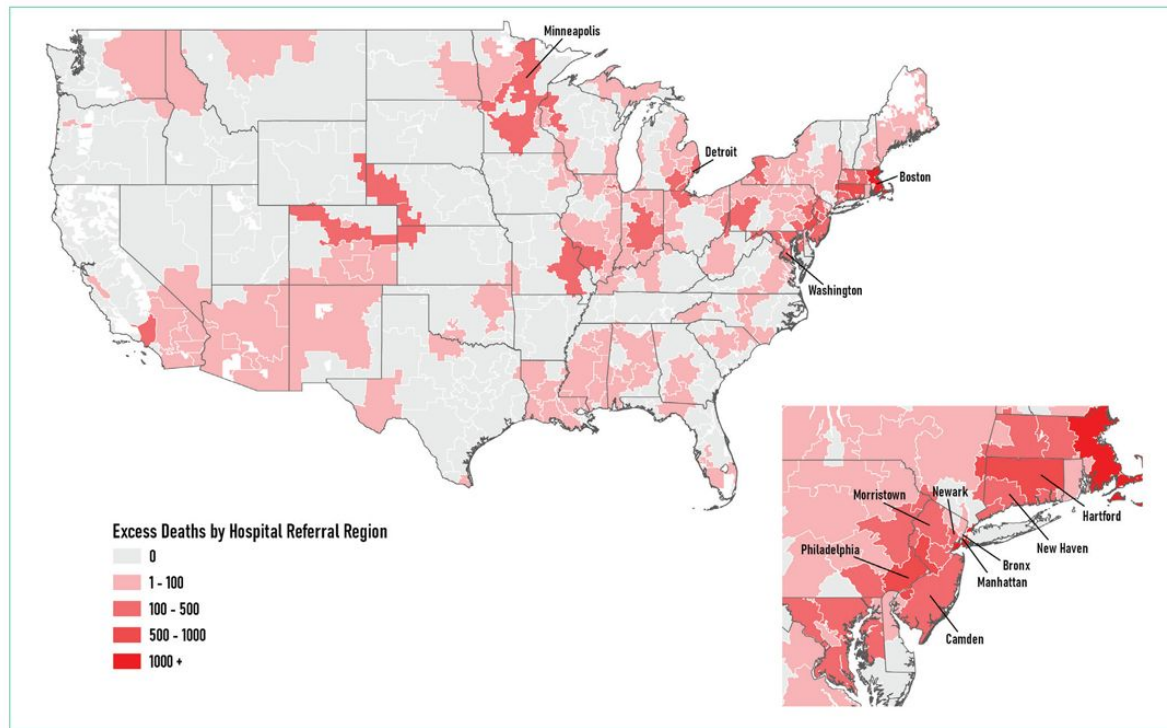
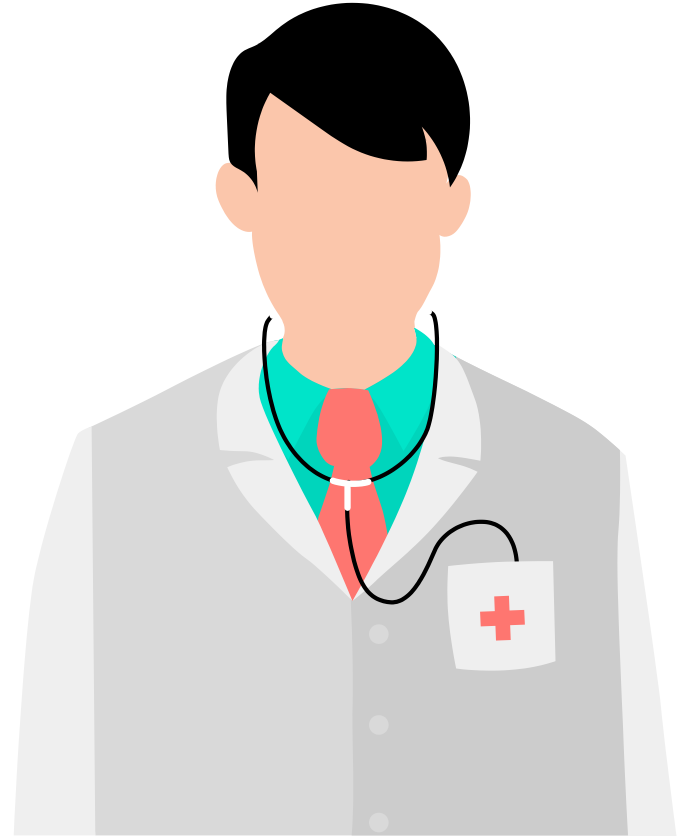


FIG. April COVID-19 Excess Deaths Estimated in Model of ICU Bed Availability. The map depicts the difference between observed and predicted death counts from COVID-19 by hospital referral region. A Poisson distribution regression model of COVID-19 death count on ICU beds per COVID-19 case was estimated, and predicted death counts were obtained via postestimation method that assumed that hospital referral regions with fewer-than-average ICU beds per case instead had the average amount nationwide in April.

Abbreviation: ICU, intensive care unit.

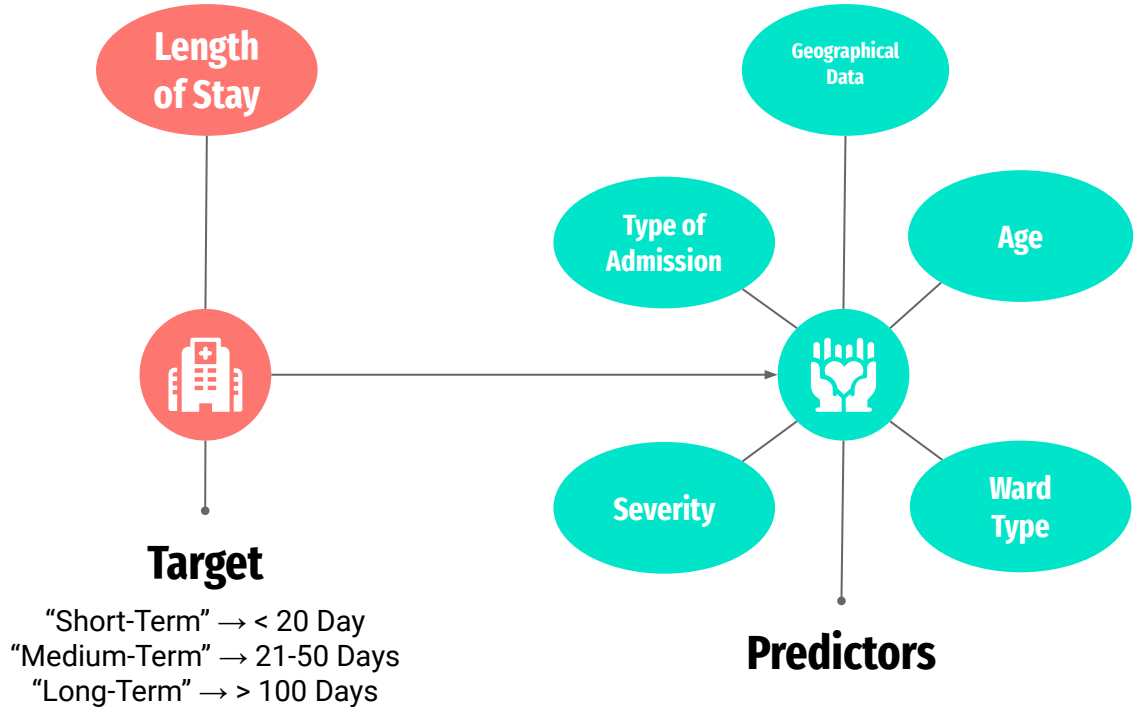
The DATA



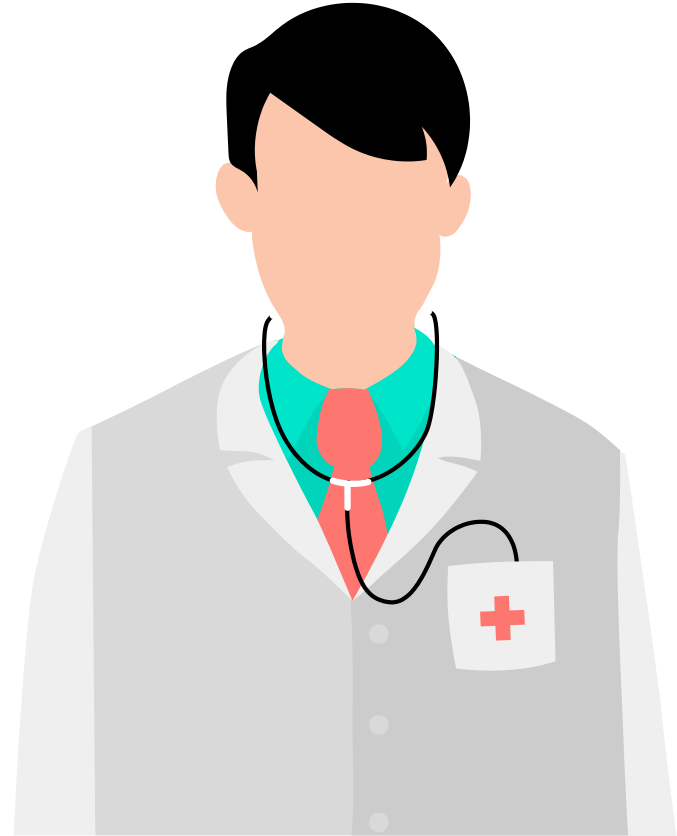
Overview of Data

- **COVID-19 AV Healthcare Analytics Dataset**

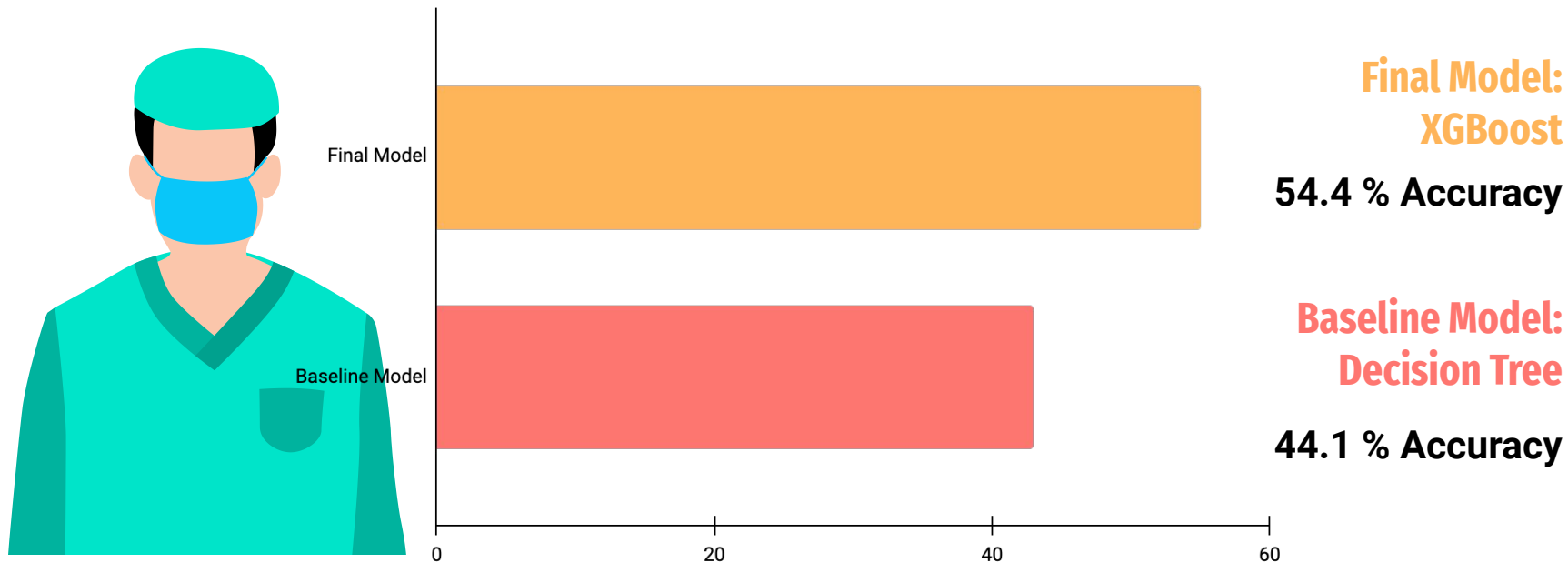
- 3 Regions in U.S.
- 13 Cities
- 30 Hospitals
- ~320,000 Patients



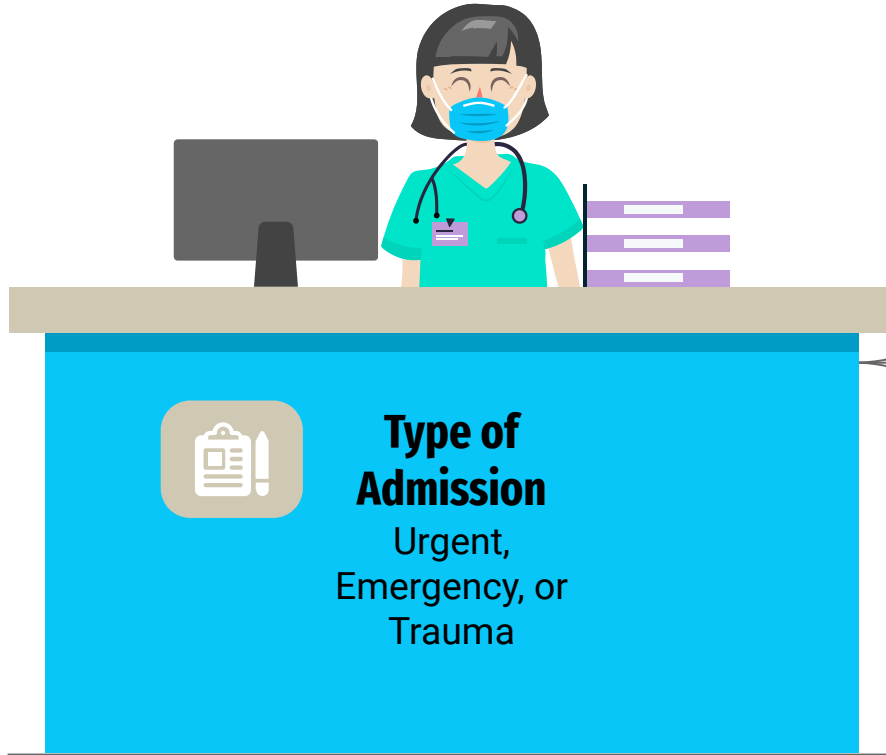
The RESULTS



Modeling



Recommendations



Ward Type
Where the patient is placed



Severity of Illness
Minor, Moderate, or Severe



Bed Grade
ICU, Med Surg, General, etc.



Type of Admission



Ward Type



Severity of Illness



Bed Grade



Length of Stay



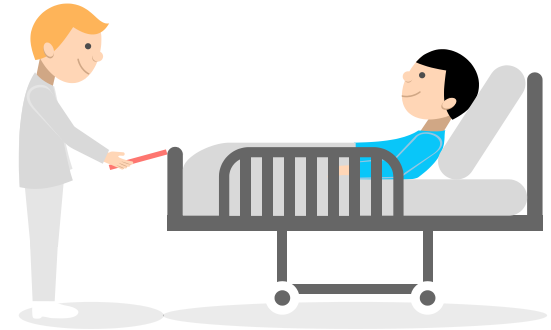
Short-Term

Long-Term

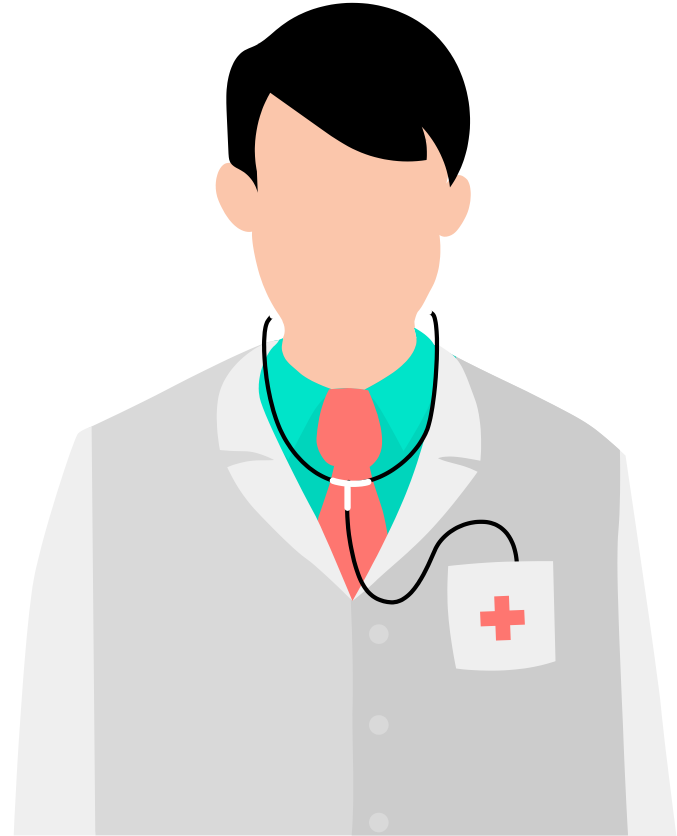
Medium-Term



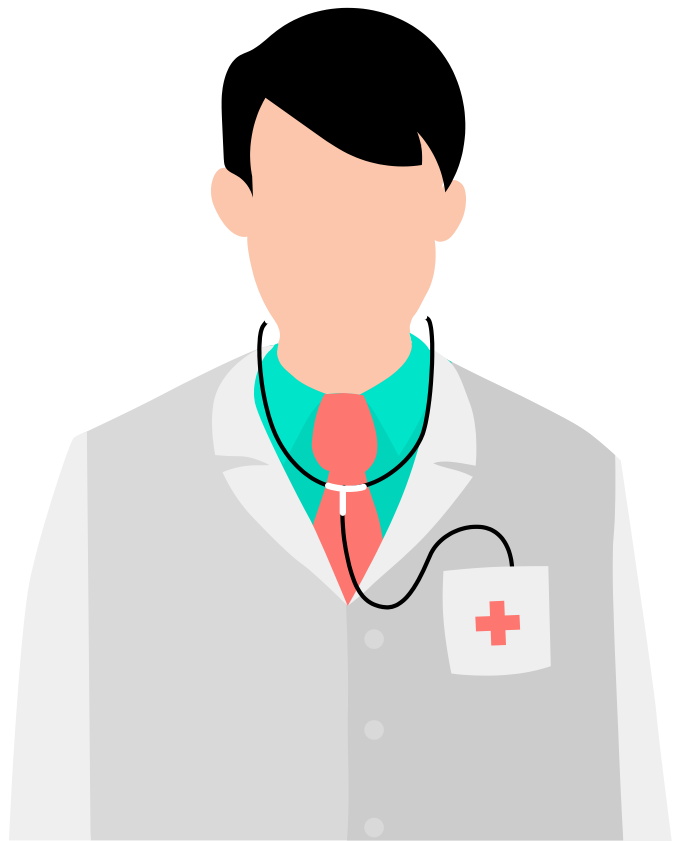
**Personnel
&
Resources**



The FUTURE RESEARCH



Next Steps...



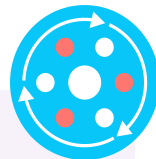
01



Vaccinations

Y/N , Type, Doses

02



Variants

Delta, Omicron

03



Regionality

Urban/Rural
High/Low Income

04



Hospital Info

Resources,
Funding

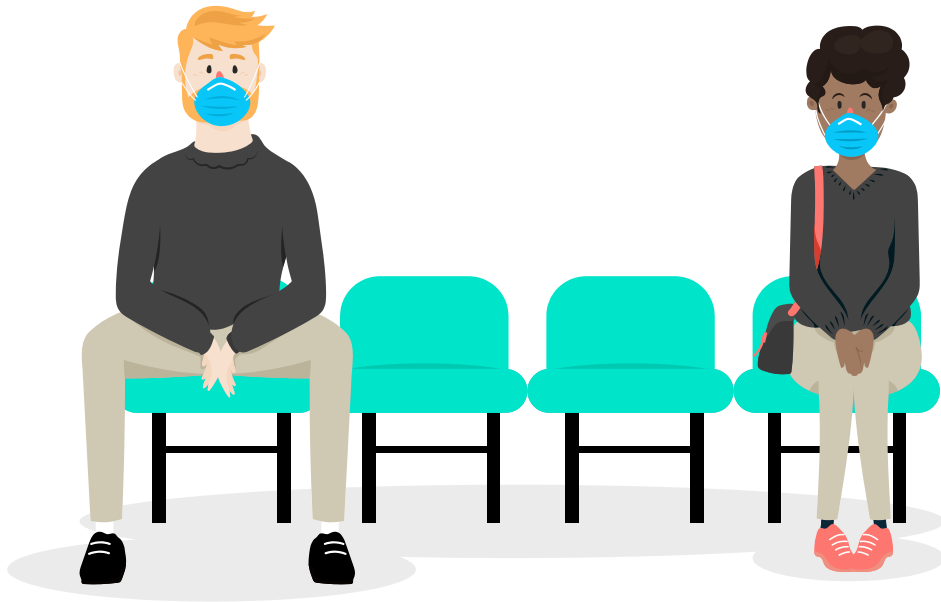
Thank you! Questions?



a.marinelli.12@gmail.com

drewbycakes

/andrew-marinelli-a69bb943/



APPENDIX