



Vaccination Outreach for the Next COVID-19

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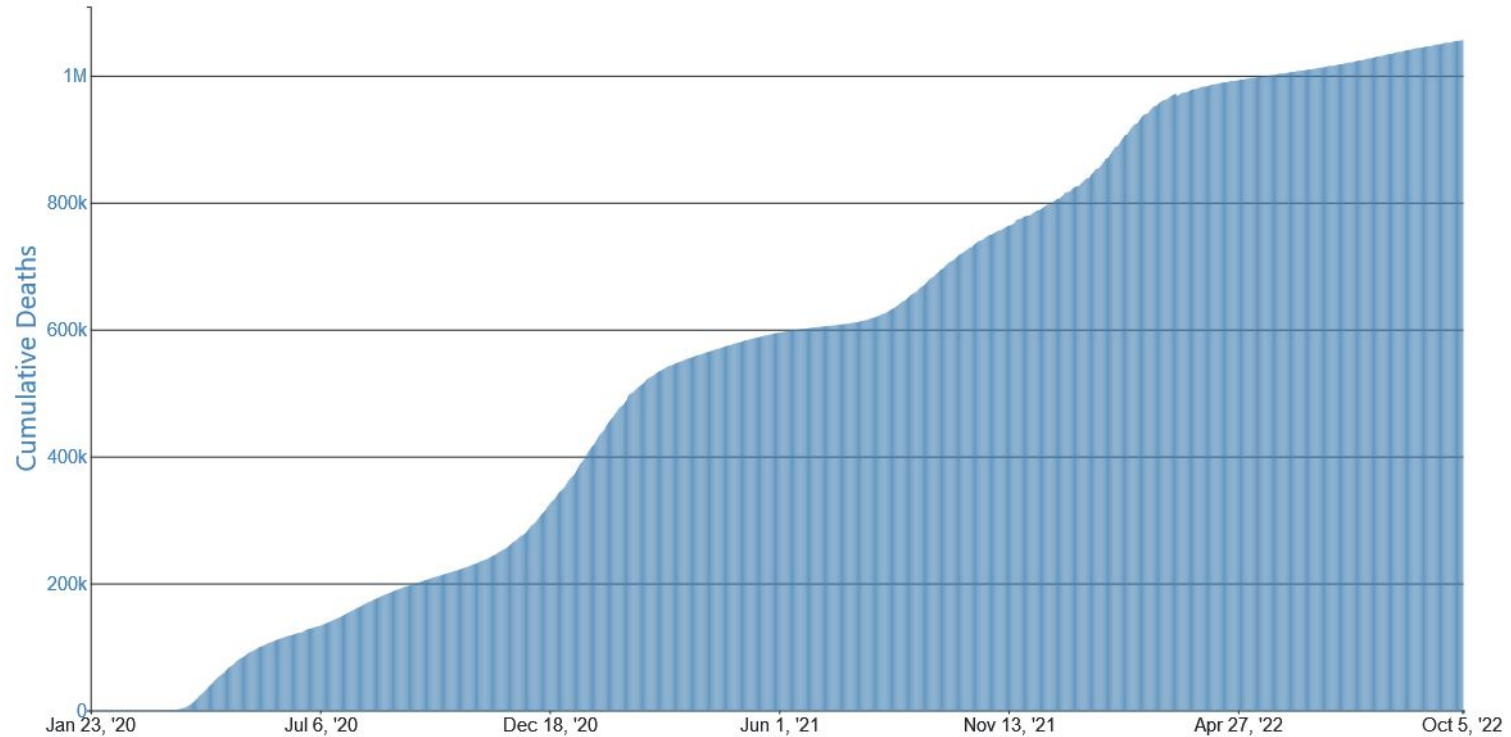
Presentation Agenda

- Business Problem
- Data Overview and Limitations
- Our Models
- Recommendations
- Future Insights

Business Problem



Over 1 Million Lives Lost to COVID-19 In USA



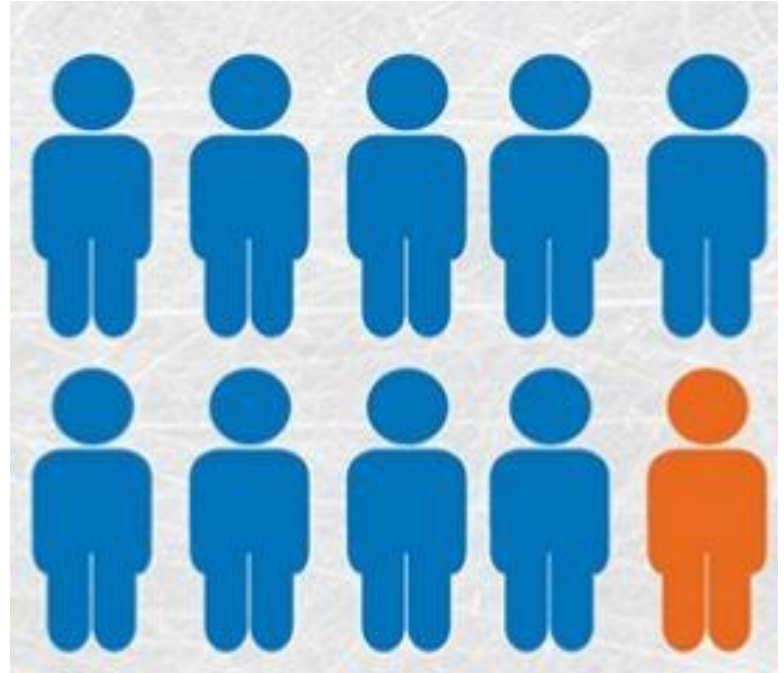
CDC Vaccine Outreach Can Save Lives

- Predict vaccination status using historic H1N1 data
- Targeted messaging to unvaccinated



Bottom Line: Achieve Herd Immunity With Vaccination

- Model identified 9 out of 10 people who need vaccine information
- Physician involvement and education

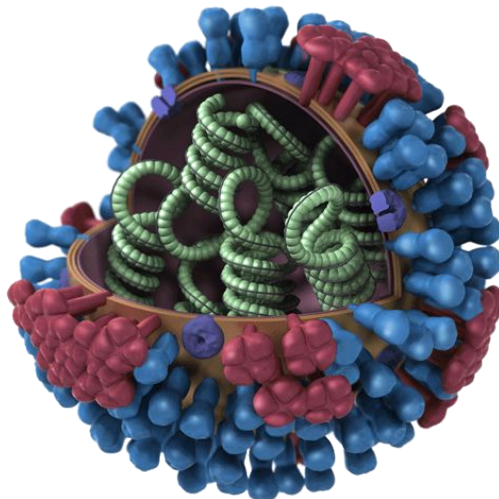


Data Overview

27,000 Phone Surveys



2009 H1N1 Pandemic



20% Vaccinated





Limitations

- Self-reported answers
- Missing data
- Elderly overrepresented

Potential Solutions

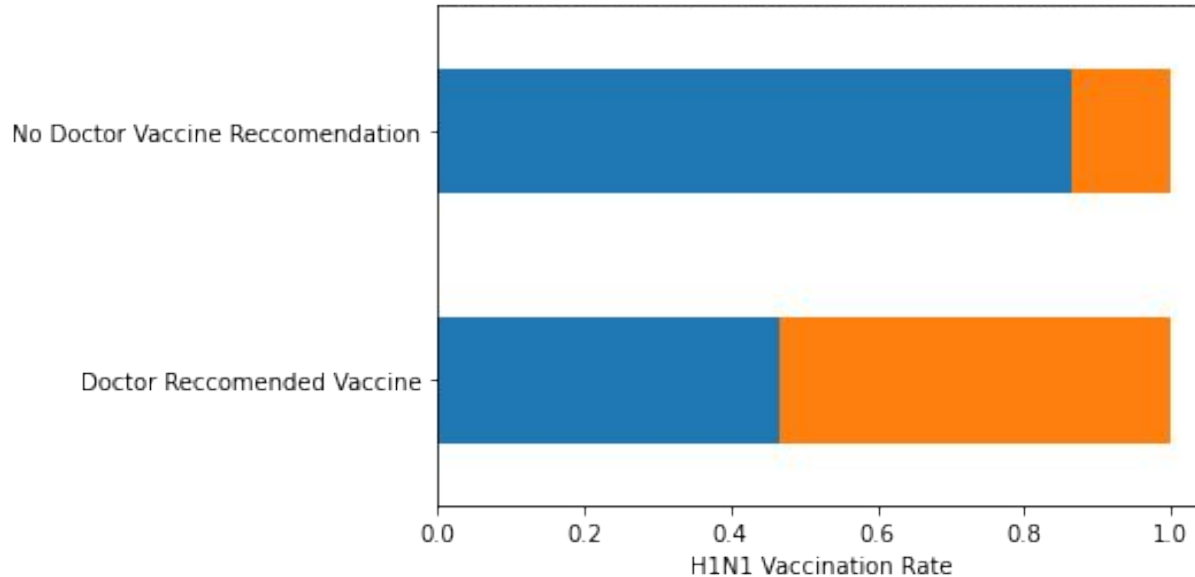
- Focus on demographics
- Impute missing data
- Internet survey in future

Models



Doctor recommendation key to getting people vaccinated

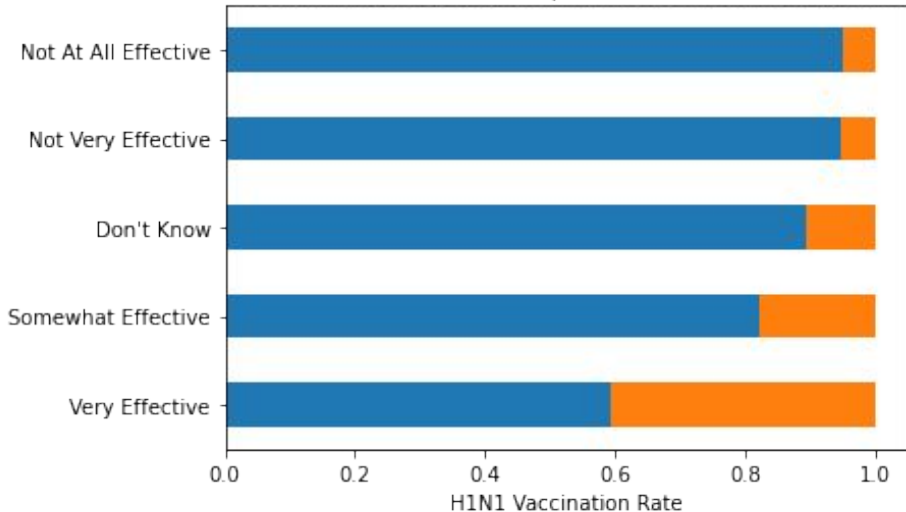
Blue: Unvaccinated
Orange: Vaccinated



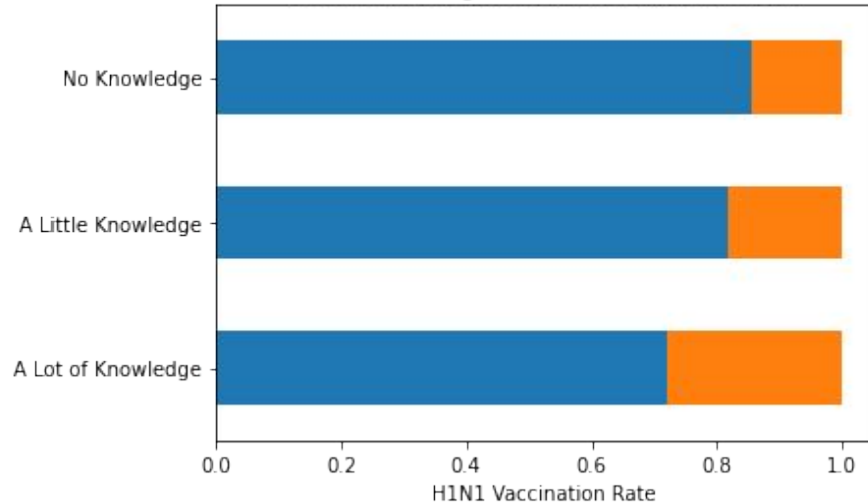
Knowledgeable people are more likely to get vaccinated

Blue: Unvaccinated
Orange: Vaccinated

H1N1 Vaccine Effectiveness Opinion vs H1N1 Vaccination Rate

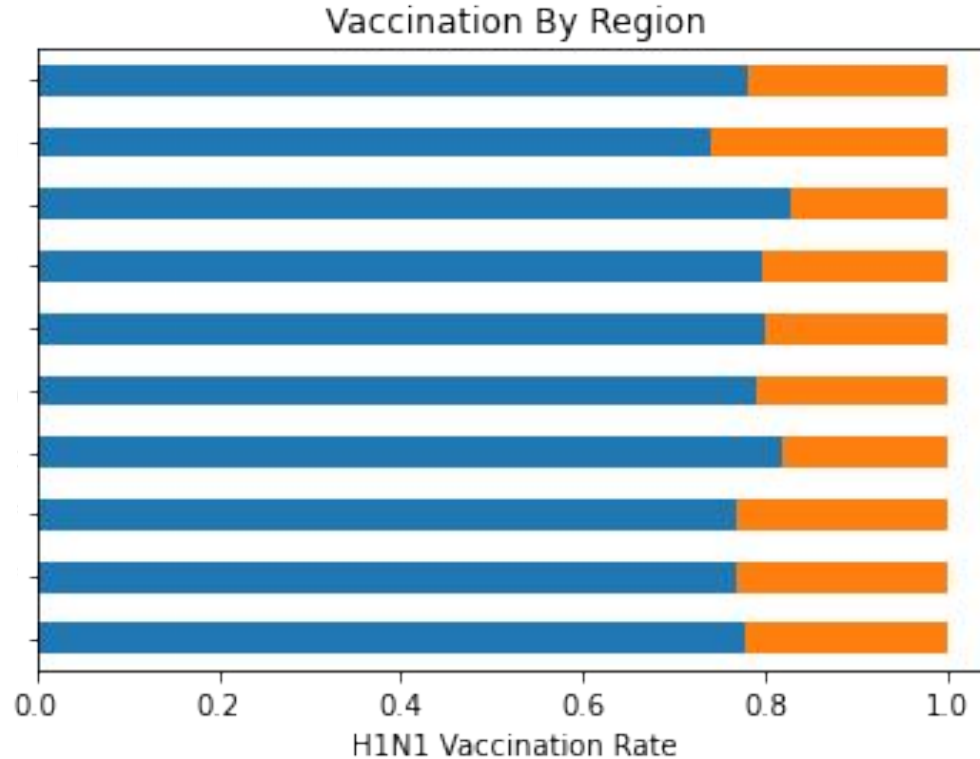


H1N1 Knowledge vs H1N1 Vaccination Rate



Some regions of USA less vaccinated

Blue: Unvaccinated
Orange: Vaccinated



Modeling Process



Most Important Features

Dr. Recommendation

Concern Level

Perceived Vaccine
Effectiveness

Our Model

Vaccinated

Unvaccinated

Our Best Model was 90% Precise

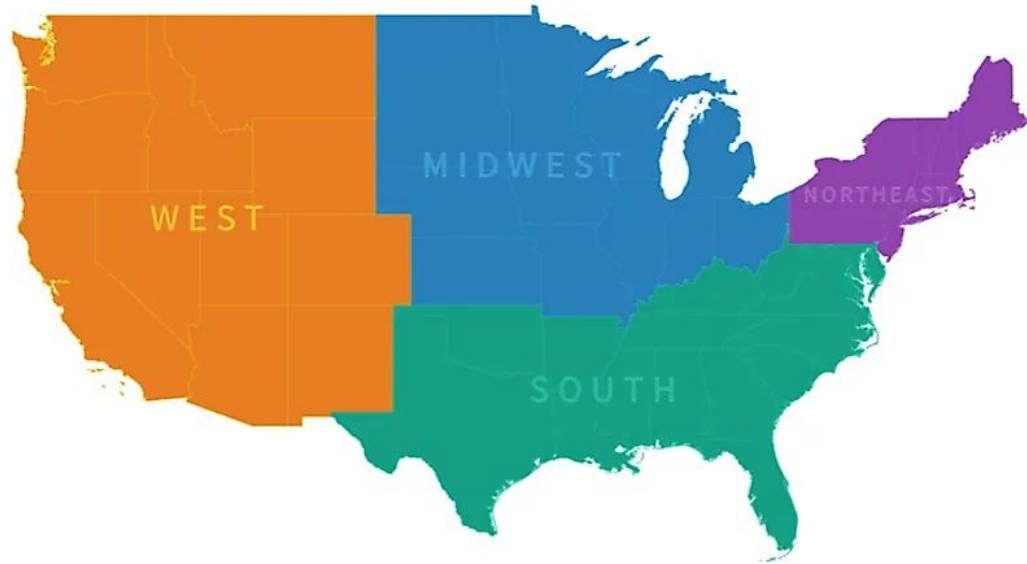
9 in 10 unvaccinated were
correctly identified



Alternate: Demographic Model 30% Precise

Important Features:

- Age
- Region of USA
- Number of Children



Recommendations

- Physician involvement and access
- Virus education campaign
- Target identified unvaccinated groups





Future Insights

- COVID-19 revealed new demographic divides
- Ways to change vaccine opinion
- COVID-19 data

The political divide over the coronavirus vaccine



41%

**of Republicans say
they do not plan to get
vaccinated.**

4%

**of Democrats say they
do not plan to get
vaccinated.**

PBS NewsHour/NPR/Marist Poll National Adults. Interviews conducted May 4 through May 10, 2021, n=1249 margin of error +/- 3.3 percentage points. Democrats: n=371, margin of error +/- 6.1 percentage points. Republicans: n=285, margin of error +/- 7.0 percentage points

Questions



Credits:

This presentation template was created by Google Slides.
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Patrick Arnold

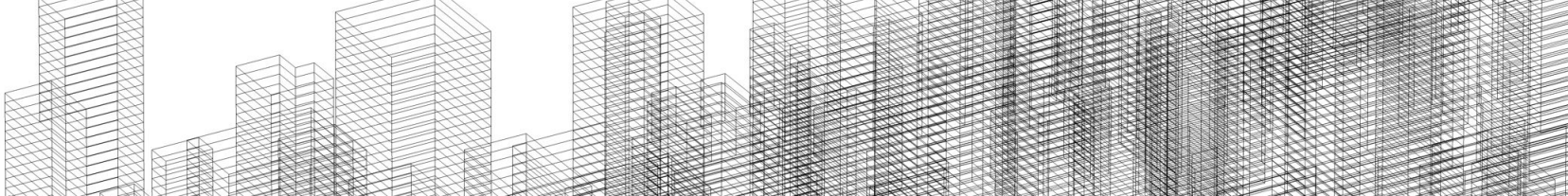
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Appendix

<https://ourworldindata.org/vaccination>

<https://www.hopkinsmedicine.org/news/newsroom/news-releases/herd-immunity-is-a-dangerous-strategy-for-fighting-covid-19-says-johns-hopkins-expert>

<https://www.pbs.org/newshour/health/as-more-americans-get-vaccinated-41-of-republicans-still-refuse-covid-19-shots>