Vaccination Status

Manav Kahlon

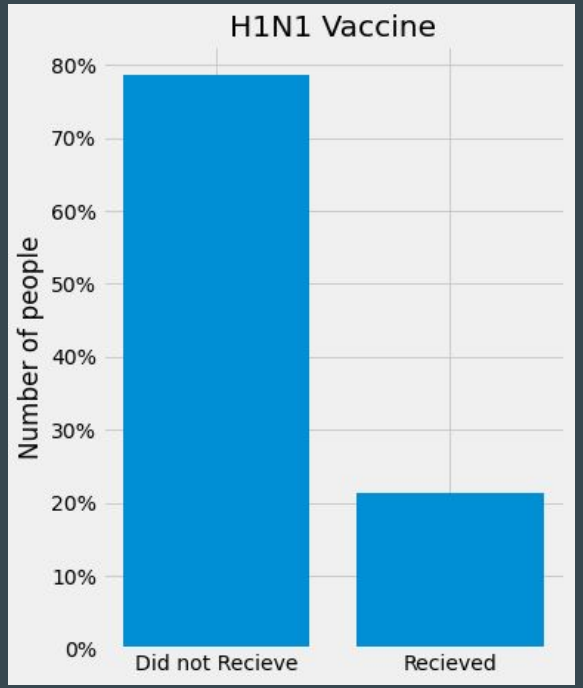
Business Problem

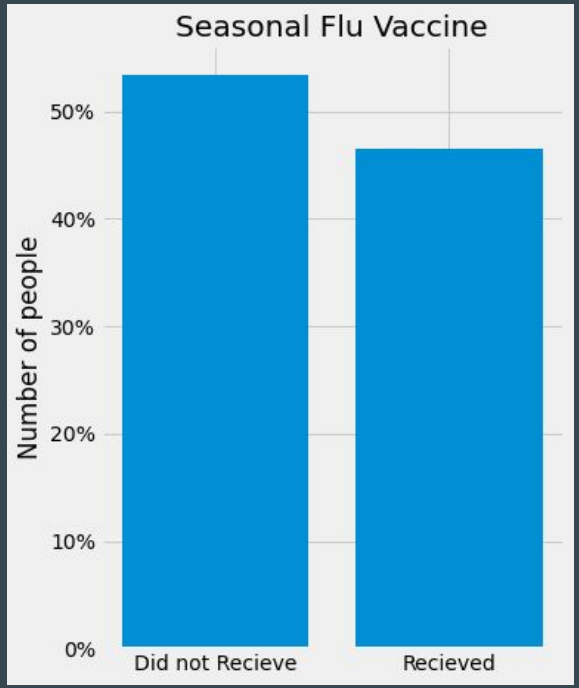
- A non-profit wants to see the factors that determine if an individual has received either the H1N1 vaccine and/or the flu vaccine.

Data

- Approximately 26,000 records of individuals from Driven Data

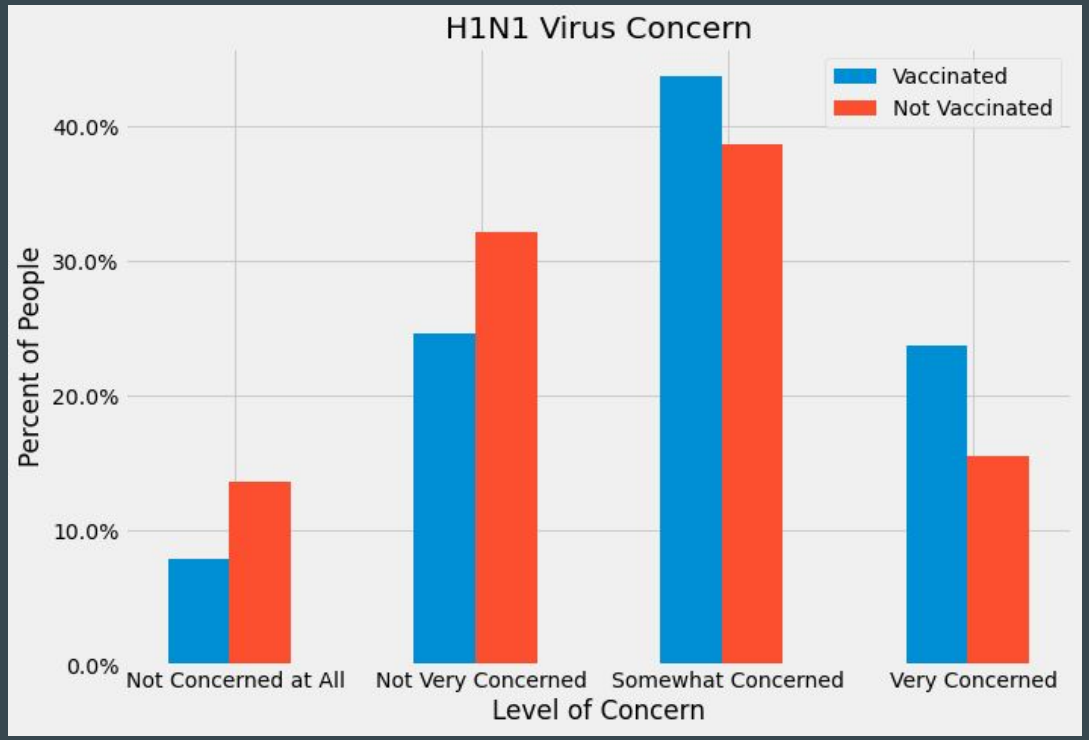
Vaccination Status





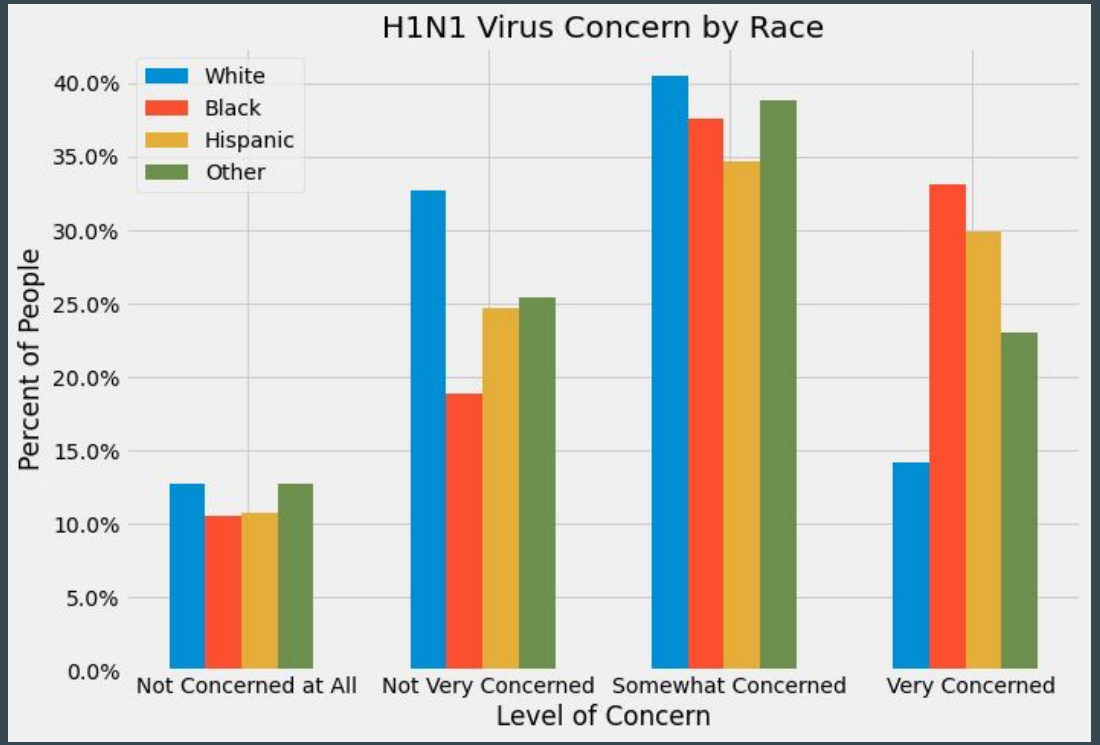
Concern of H1N1 Virus

- Not Concerned at All
  - 5.69% lower
- Very Concerned
  - 8.19% higher



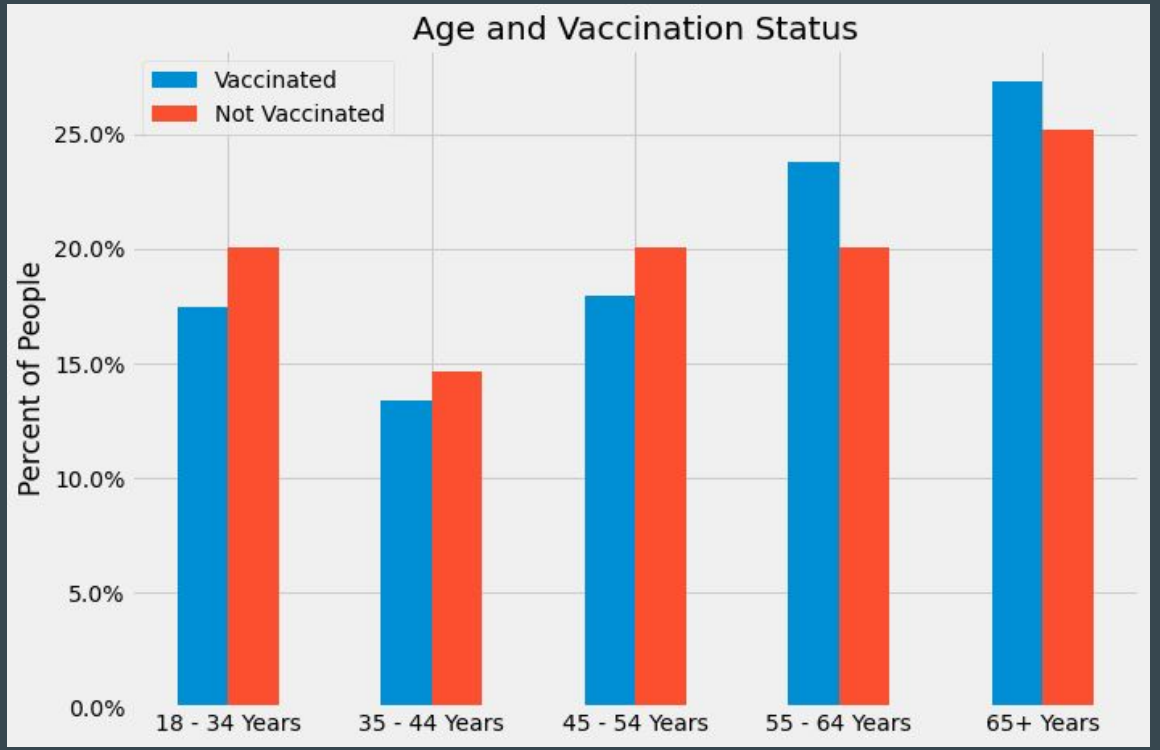
Concern by Race

- Very Concerned
  - Black, Hispanic, Other



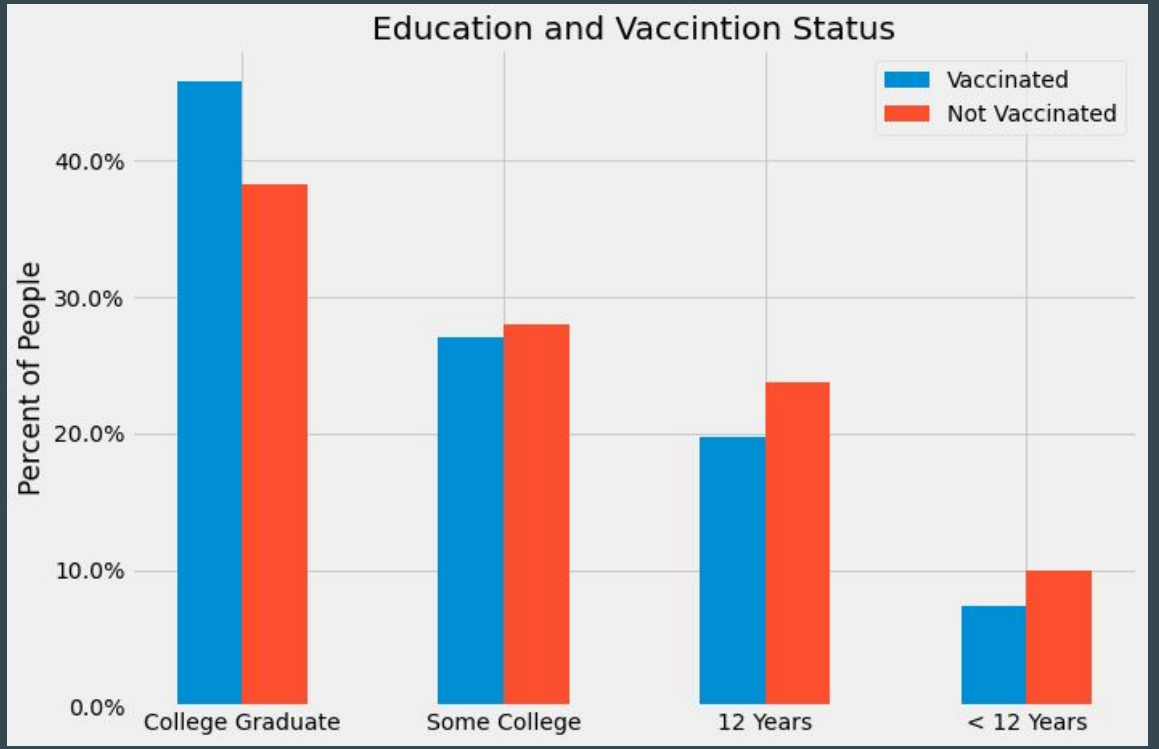
Age and H1H1 Vaccine

- Not Vaccinated
  - 18-34
- Vaccinated
  - 55-64



Education and H1N1 Vaccine

- Education higher impacts vaccination status

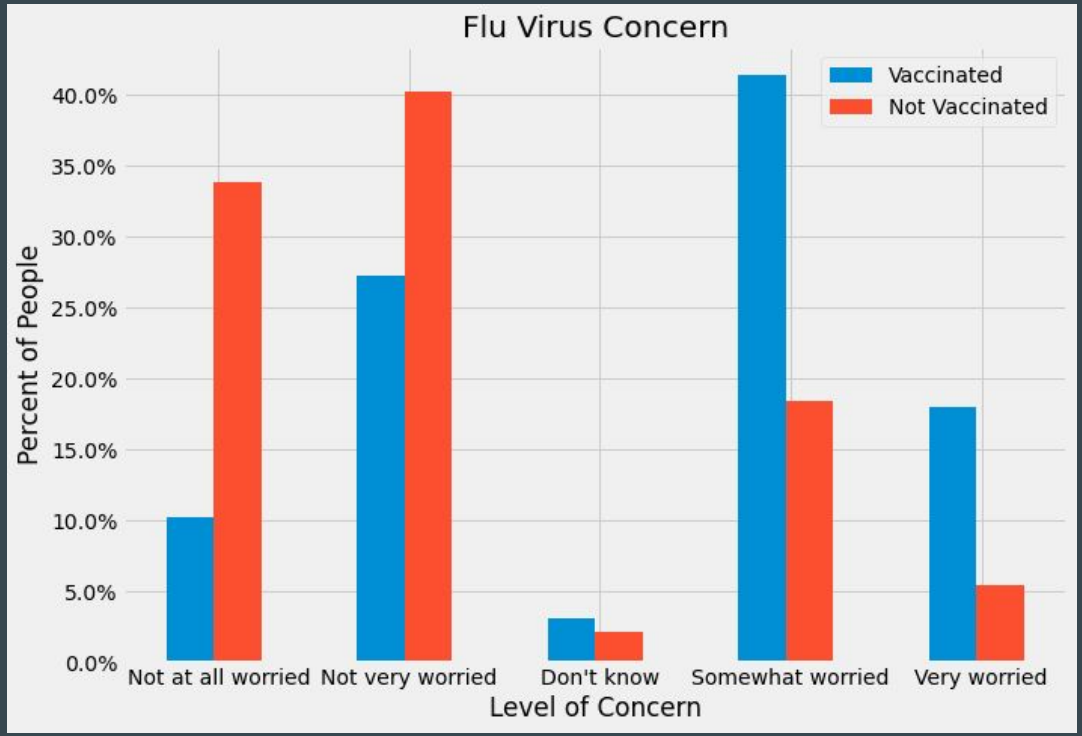


H1N1 Models

Logistic	K-Nearest Neighbors	Support Vector Classifier	Random Forest Classifier	Gradient Boosting Classifier	XGBoost Classifier	Neural Network
77.0%	76.0%	80.1%	83.5%	83.8%	84.0%	80.6%

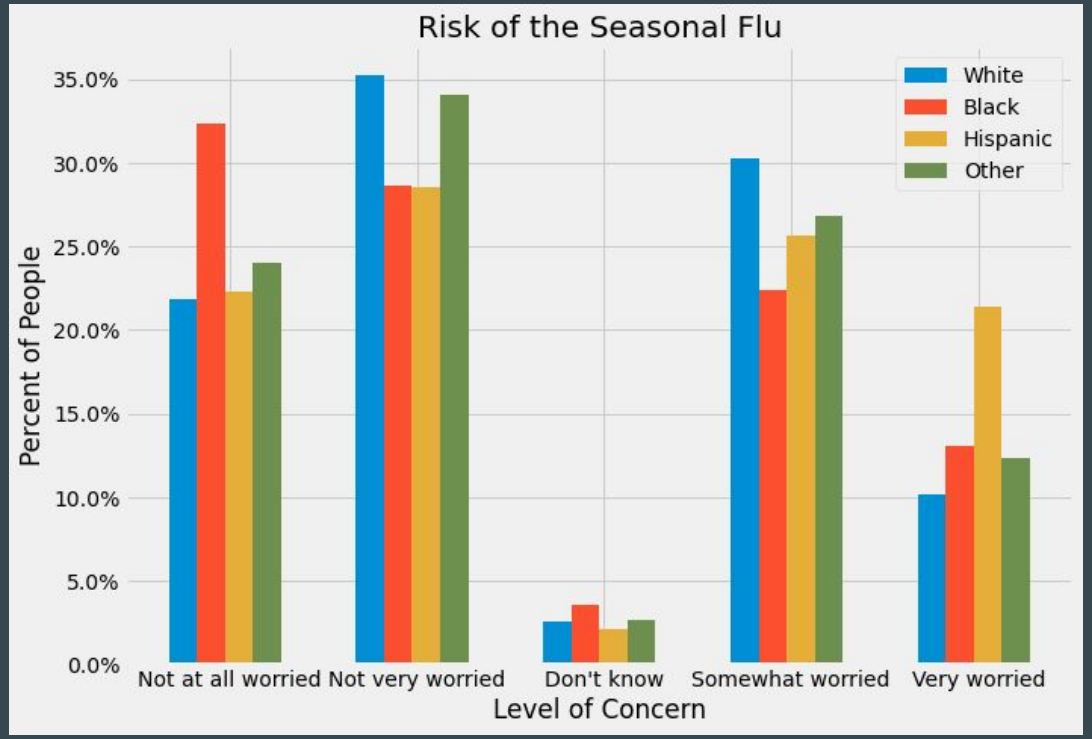
Seasonal Flu Concern

- Not Worried at All
  - 24% smaller
- Somewhat Worried
  - 40% greater



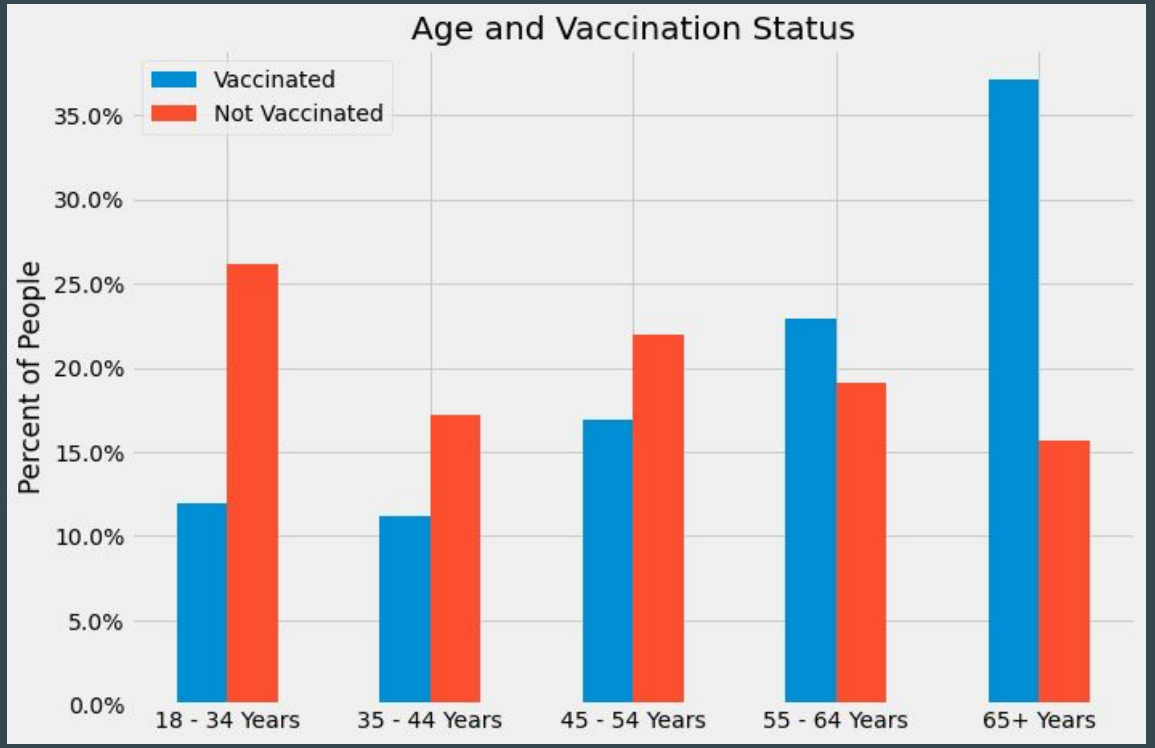
Concern by Race

- Not at All Worried
  - Black
- Very Worried
  - Hispanic



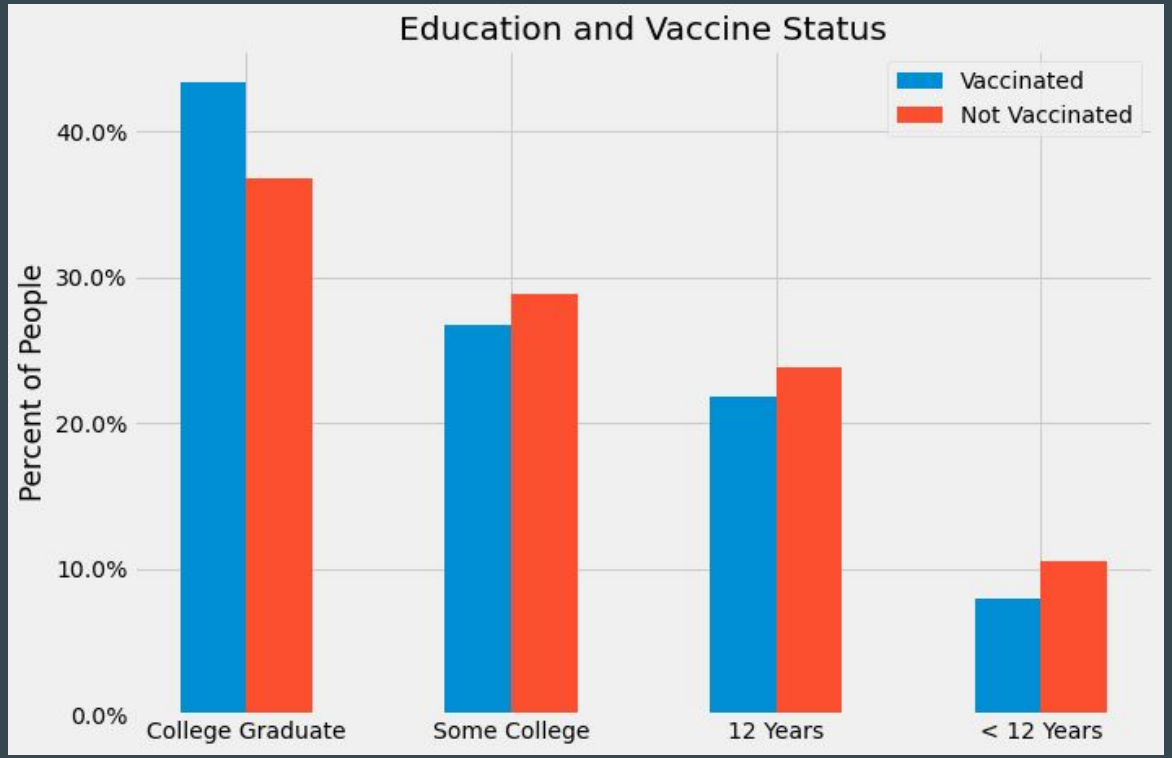
Age and Flu Vaccine

- Not Vaccinated
  - 18-34 Years
- Vaccinated
  - 65+ Years



Education and Flu Vaccine

- Vaccinated
  - College Graduate
- Not Vaccinated
  - < 12 Years



Flu Models

Logistic	K-Nearest Neighbors	Support Vector Classifier	Random Forest Classifier	Gradient Boosting Classifier	XGBoost Classifier	Neural Network
77.6%	73.7%	78.0%	77.9%	78.3%	78.4%	77.1%

Conclusion

- H1N1 Vaccination
  - Race
  - Age
  - Education
- Flu Vaccination
  - Race
  - Age
  - Education

Next Steps

- More information
  - Efficacy of Vaccines
  - Political Affiliation
  - Region
  - Attempt to complete missing data
- Runtime
  - More Computational power

Questions?