Problem Statement

<https://www.youtube.com/watch?v=r4YJU2BFsTk&t=1230s> 20:30

Increasing the COVID-19 vaccination rates among Humana’s members continues to be a priority both for member and the larger population health and safety considerations. Humana is particularly focused on providing vaccination opportunities to the most vulnerable and underserved populations. Existing disparities in health equity have become very visible during the vaccine response to COVID-19.

Humana and many others have reduced real barriers to gaining access for those who want the vaccine. In addition, a portion of the members, like in the general population, are hesitant or resistant to get the vaccine due to a combination of factors that include, misinformation, and lack of trust in the vaccine. It is believed that these members will require personalised outreaches involving clinical conversations to build trust in the vaccine. However, member level vaccination status data is incomplete due to lack of consistent and timely data capture at the vaccination sites.

Using the provided data and potentially supplementing with public data, create a model to **predict which members are likely to be hesitant** so that Humana can design targeted outreaches for these members, prioritized to reach the most vulnerable and underserved populations to receive health solutions.

Measures:

“Hesitant” = how to measure?

Potential Variables:

Race

Gender

Income

Environment

Distance to hospital/clinic/health center (?)

**Tips:**

Fairness: account for race, sex, age, low income status, and disability status.

Proposed solution: Since the hesitancy of non-vaccinated people is non-homogenous due to different reasons (pre-existing conditions, access, misinformation, lack of trust in the vaccine), there may be different solutions for each population segment.

**Data Overview:**

Target population: Humana MAPD members

Event: Each member will have a binary flag to indicate vaccination Status

Lookback: Vaccination data as of 3rd week of March 2021; 1 year look back; Demographic & RWJF features as of July 2020

**Round 1:**

Criterion: model accuracy (ROC and AUC) and fairness (observed disparity score)

Start at 100% likeliness to get vaccinated.

1. Covid\_vaccination == “vacc” → 100