



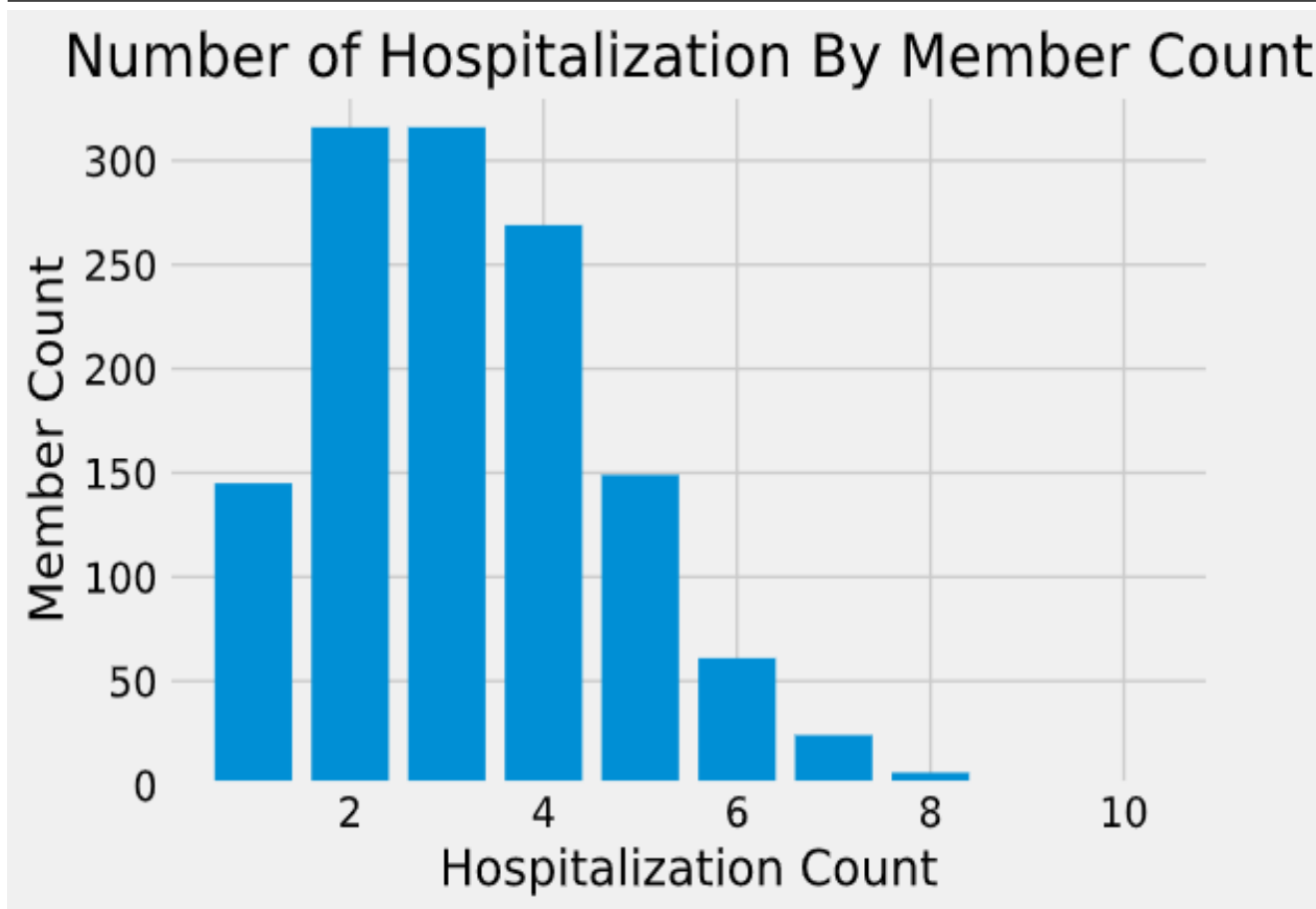
Hospital Admission Prediction

ANGUS HUANG

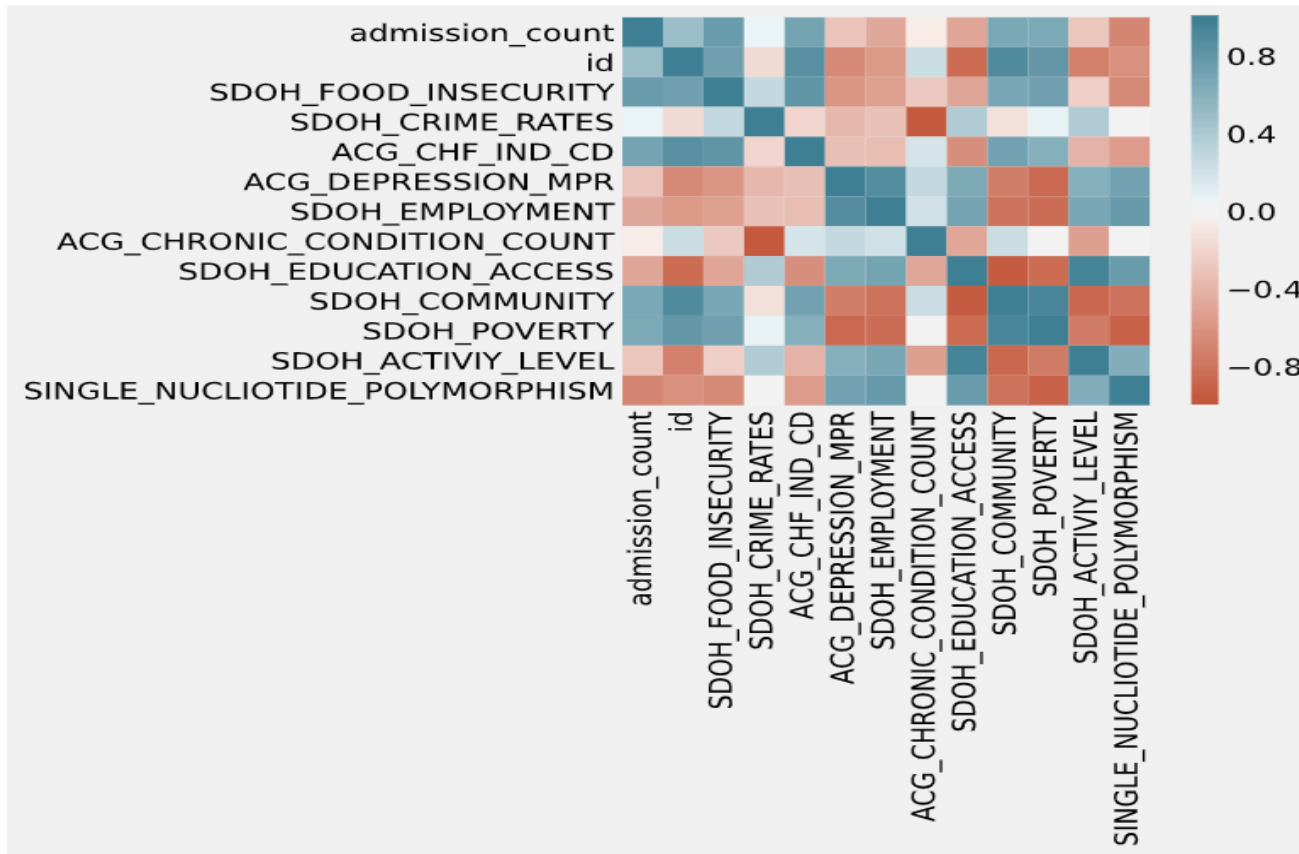
03/16/2020

Cohorts as Hospitalization Count

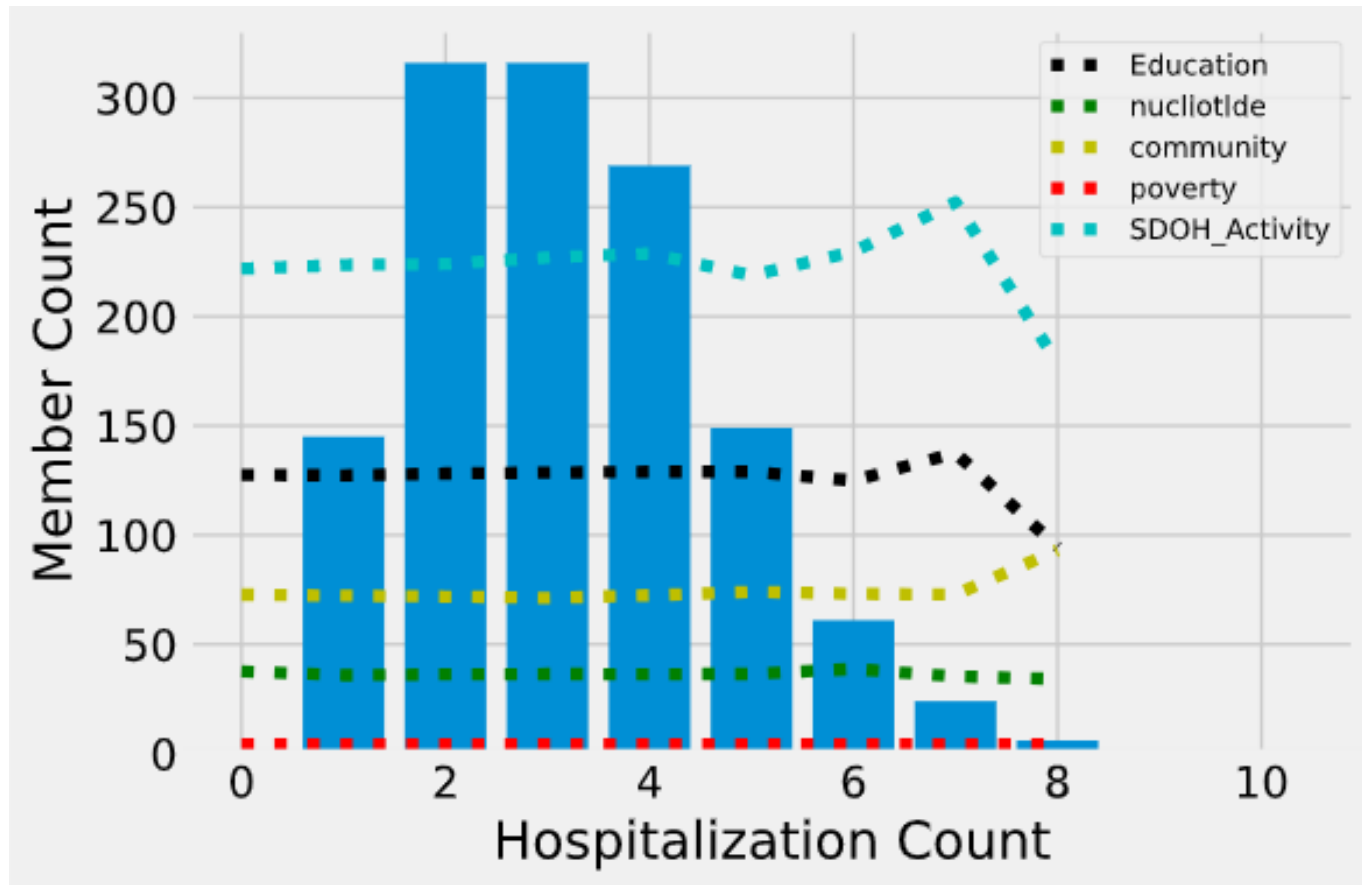
Total = 1,287 members | Trips = 4,138



- strong correlation among unexpected variables



Features & Target Variables



Feature Importance & Contribution to Model

	Features	Gini-importance
0	SINGLE_NUCLITIDE_POLYMORPHISM	10%
1	SDOH_EDUCATION_ACCESS	9%
2	SDOH_COMMUNITY	8%
3	SDOH_POVERTY	8%
4	SDOH_EMPLOYMENT	8%
5	ACG_DEPRESSION_MPR	8%
6	ACG_CHRONIC_CONDITION_COUNT	8%
7	SDOH_ACTIVIY_LEVEL	8%
8	ACG_CHF_IND_CD	8%
9	SDOH_FOOD_INSECURITY	8%
10	SDOH_CRIME_RATES	8%
11	age	7%
12	male	1%
13	female	1%

Confusion Matrix for Model Performance

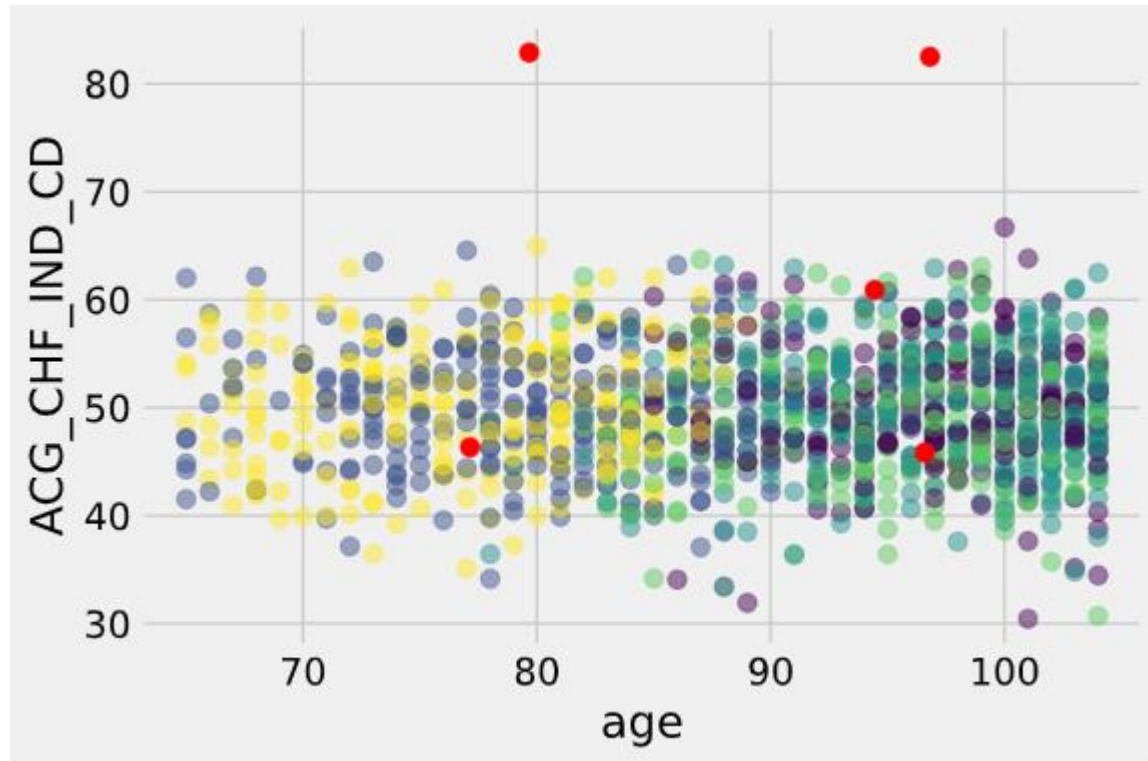
1. Model for member with admission only

	abovefive	onetwo	threefive
abovefive	0	2	31
onetwo	0	19	136
threefive	0	22	177

2. Model for entire population

	abovefive	noadmit	onetwo	threefive
abovefive	0	28	0	1
noadmit	0	2601	0	1
onetwo	0	117	3	6
threefive	0	221	3	19

Cluster of Members By Features



Facility Rating By Admission Count

name	admission_count
Marshall Medical Center South	447
Mizell Memorial Hospital	441
Helen Keller Memorial Hospital	426
Crenshaw Community Hospital	423
Dekalb Regional Medical Center	418
St Vincent's East	414
Callahan Eye Hospital	401
Eliza Coffee Memorial Hospital	394
Southeast Alabama Medical Center	388
Shelby Baptist Medical Center	386