PRELIMINARY RESULTS FOR BRAZIL COVID-19 DATASET

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1 Basic Analytics

	0
N	73649
N_Hosp	67042
N_Death	24524
Female	31368
Male	42262
Race	21636
Schooling	5451
Contracted At Hospital	1982
Contact Birds Pigs	615
Fever	54483
Cough	56681
Throat	15962
Dyspnea	51312
Respiratory Discomfort	42990
SpO2 less 95\%	40806
Diarrhea	10066
Vomiting	5669
Other Symptoms	23044
Postpartum	313
Cardiovascular Disease	23085
Hematologic Disease	708
Down Syndrome	180
Liver Chronic Disease	622
Asthma	2058
Diabetes	17271
Neurological Disease	2783
Another Chronic Pneumopathy	2725
Immunosuppression	2245
Renal Chronic Disease	2995
Obesity	2656
Other Risks	17778
Antiviral Use	24765
Hospitalization	67042
ICU	22332
Ventilator	13621
Xray Torax Result	2029
Result Final	0
Evolution	27934

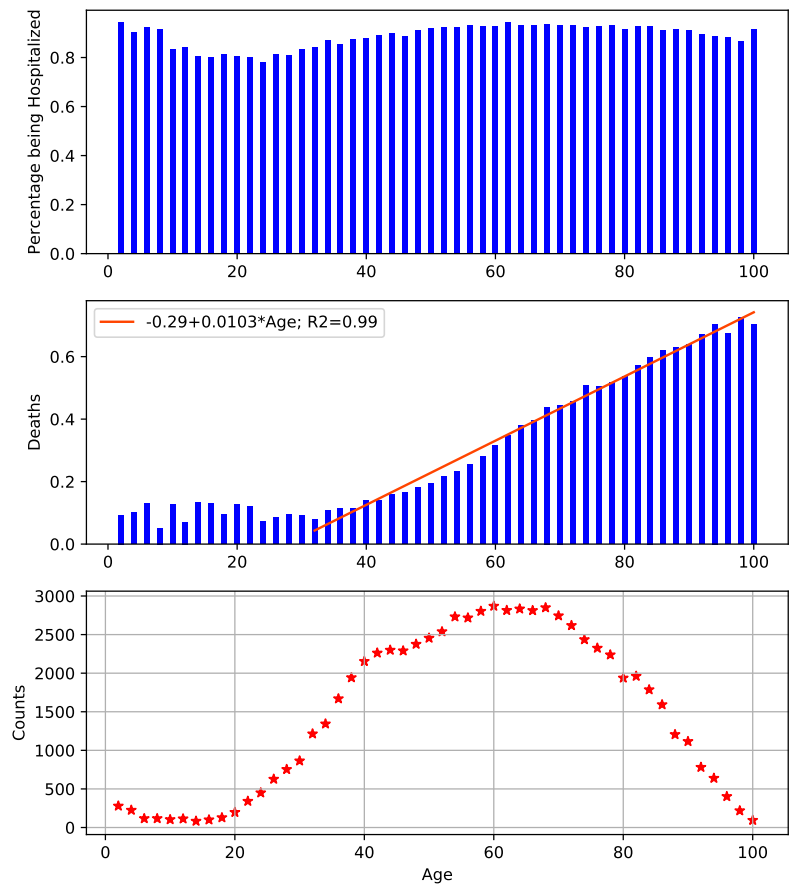**Table 1:** Number of observations with a specific observation

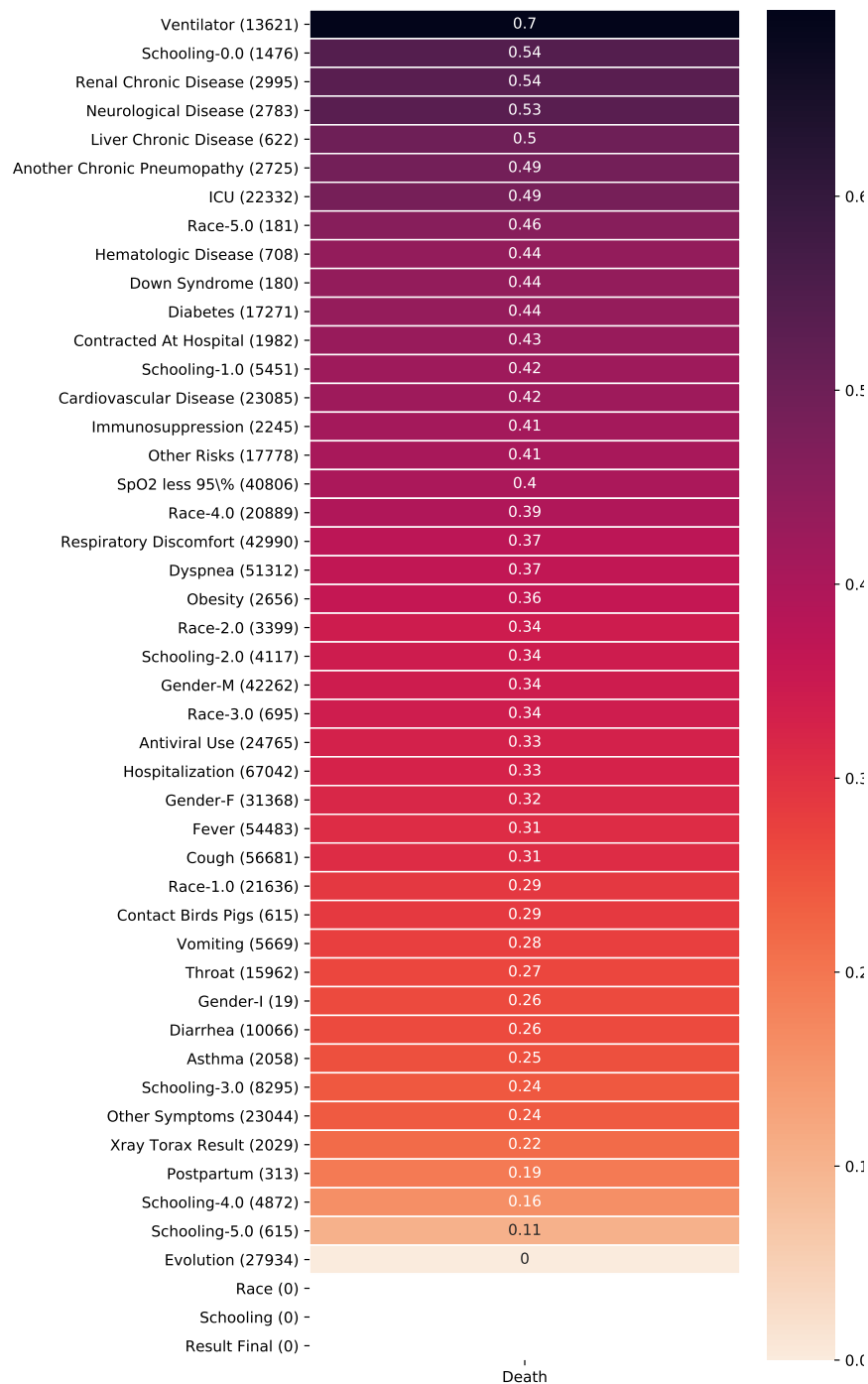**Figure 1:** Distribution of hospitalization and deaths by age group

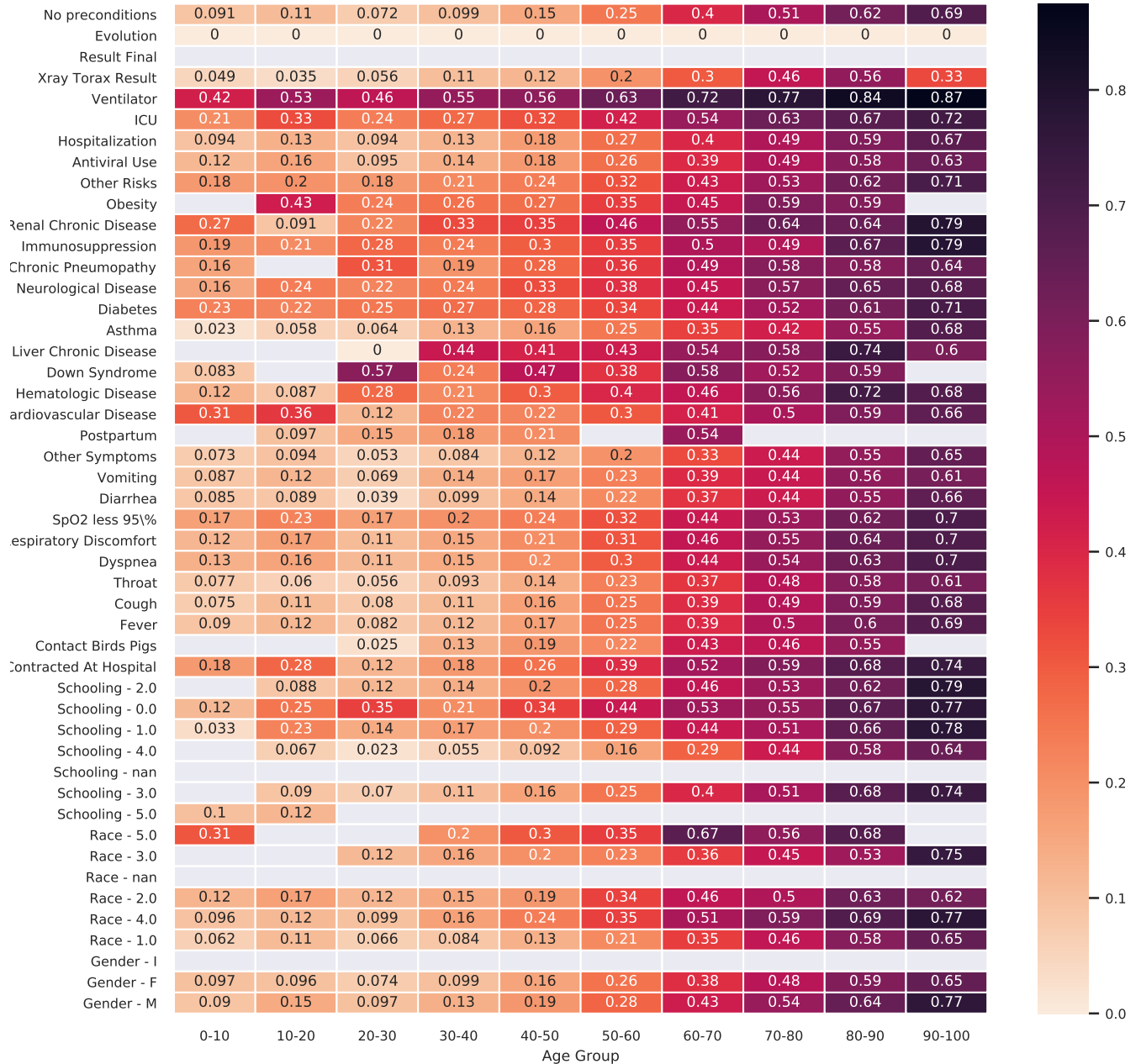**Figure 2:** Share of hospitalized and deaths patients given characteristics

Characteristic	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No preconditions	0.091	0.11	0.072	0.099	0.15	0.25	0.4	0.51	0.62	0.69
Evolution	0	0	0	0	0	0	0	0	0	0
Result Final										
Xray Torax Result	0.049	0.035	0.056	0.11	0.12	0.2	0.3	0.46	0.56	0.33
Ventilator	0.42	0.53	0.46	0.55	0.56	0.63	0.72	0.77	0.84	0.87
ICU	0.21	0.33	0.24	0.27	0.32	0.42	0.54	0.63	0.67	0.72
Hospitalization	0.094	0.13	0.094	0.13	0.18	0.27	0.4	0.49	0.59	0.67
Antiviral Use	0.12	0.16	0.095	0.14	0.18	0.26	0.39	0.49	0.58	0.63
Other Risks	0.18	0.2	0.18	0.21	0.24	0.32	0.43	0.53	0.62	0.71
Obesity		0.43	0.24	0.26	0.27	0.35	0.45	0.59	0.59	
Renal Chronic Disease	0.27	0.091	0.22	0.33	0.35	0.46	0.55	0.64	0.64	0.79
Immunosuppression	0.19	0.21	0.28	0.24	0.3	0.35	0.5	0.49	0.67	0.79
Chronic Pneumopathy	0.16		0.31	0.19	0.28	0.36	0.49	0.58	0.58	0.64
Neurological Disease	0.16	0.24	0.22	0.24	0.33	0.38	0.45	0.57	0.65	0.68
Diabetes	0.23	0.22	0.25	0.27	0.28	0.34	0.44	0.52	0.61	0.71
Asthma	0.023	0.058	0.064	0.13	0.16	0.25	0.35	0.42	0.55	0.68
Liver Chronic Disease			0	0.44	0.41	0.43	0.54	0.58	0.74	0.6
Down Syndrome	0.083		0.57	0.24	0.47	0.38	0.58	0.52	0.59	
Hematologic Disease	0.12	0.087	0.28	0.21	0.3	0.4	0.46	0.56	0.72	0.68
Cardiovascular Disease	0.31	0.36	0.12	0.22	0.22	0.3	0.41	0.5	0.59	0.66
Postpartum		0.097	0.15	0.18	0.21		0.54			
Other Symptoms	0.073	0.094	0.053	0.084	0.12	0.2	0.33	0.44	0.55	0.65
Vomiting	0.087	0.12	0.069	0.14	0.17	0.23	0.39	0.44	0.56	0.61
Diarrhea	0.085	0.089	0.039	0.099	0.14	0.22	0.37	0.44	0.55	0.66
SpO2 less 95\%	0.17	0.23	0.17	0.2	0.24	0.32	0.44	0.53	0.62	0.7
Respiratory Discomfort	0.12	0.17	0.11	0.15	0.21	0.31	0.46	0.55	0.64	0.7
Dyspnea	0.13	0.16	0.11	0.15	0.2	0.3	0.44	0.54	0.63	0.7
Throat	0.077	0.06	0.056	0.093	0.14	0.23	0.37	0.48	0.58	0.61
Cough	0.075	0.11	0.08	0.11	0.16	0.25	0.39	0.49	0.59	0.68
Fever	0.09	0.12	0.082	0.12	0.17	0.25	0.39	0.5	0.6	0.69
Contact Birds Pigs			0.025	0.13	0.19	0.22	0.43	0.46	0.55	
Contracted At Hospital	0.18	0.28	0.12	0.18	0.26	0.39	0.52	0.59	0.68	0.74
Schooling - 2.0		0.088	0.12	0.14	0.2	0.28	0.46	0.53	0.62	0.79
Schooling - 0.0	0.12	0.25	0.35	0.21	0.34	0.44	0.53	0.55	0.67	0.77
Schooling - 1.0	0.033	0.23	0.14	0.17	0.2	0.29	0.44	0.51	0.66	0.78
Schooling - 4.0		0.067	0.023	0.055	0.092	0.16	0.29	0.44	0.58	0.64
Schooling - nan										
Schooling - 3.0		0.09	0.07	0.11	0.16	0.25	0.4	0.51	0.68	0.74
Schooling - 5.0	0.1	0.12								
Race - 5.0	0.31			0.2	0.3	0.35	0.67	0.56	0.68	
Race - 3.0			0.12	0.16	0.2	0.23	0.36	0.45	0.53	0.75
Race - nan										
Race - 2.0	0.12	0.17	0.12	0.15	0.19	0.34	0.46	0.5	0.63	0.62
Race - 4.0	0.096	0.12	0.099	0.16	0.24	0.35	0.51	0.59	0.69	0.77
Race - 1.0	0.062	0.11	0.066	0.084	0.13	0.21	0.35	0.46	0.58	0.65
Gender - I										
Gender - F	0.097	0.096	0.074	0.099	0.16	0.26	0.38	0.48	0.59	0.65
Gender - M	0.09	0.15	0.097	0.13	0.19	0.28	0.43	0.54	0.64	0.77

Age Group

Figure 3: Share of hospitalized and deaths patients given characteristics and age group

2 Results

2.1 Mortality (previous)

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	-1.315	-1.449	-1.181	0.269	0.235	0.307	0.481	0.159	0.000	0.000
Race Indigenous	1.249	0.653	1.845	3.487	1.922	6.330	0.461	0.718	0.000	0.000
Age 70-100	0.950	0.892	1.009	2.587	2.441	2.742	0.348	0.715	0.000	0.000
Age 30-50	-0.907	-0.971	-0.844	0.404	0.379	0.430	0.550	0.224	0.000	0.000
Renal Chronic Disease	0.697	0.569	0.824	2.007	1.766	2.281	0.450	0.713	0.000	0.000
Cough	-0.596	-0.657	-0.535	0.551	0.519	0.586	0.576	0.430	0.000	0.000
SpO2 less 95\%	0.545	0.490	0.600	1.725	1.632	1.823	0.337	0.547	0.000	0.000
Other Symptoms	-0.530	-0.585	-0.475	0.589	0.557	0.622	0.509	0.353	0.000	0.000
Contracted At Hospital	0.521	0.356	0.686	1.684	1.428	1.987	0.457	0.633	0.000	0.000
Liver Chronic Disease	0.482	0.220	0.745	1.620	1.246	2.107	0.460	0.622	0.000	0.000
Postpartum	0.480	0.074	0.887	1.617	1.076	2.428	0.462	0.314	0.004	0.021
Schooling Superior	-0.479	-0.597	-0.362	0.619	0.551	0.696	0.475	0.260	0.000	0.000
Neurological Disease	0.461	0.328	0.594	1.585	1.388	1.812	0.451	0.707	0.000	0.000
Race Brown	0.451	0.389	0.513	1.570	1.476	1.670	0.429	0.549	0.000	0.000
Race White	-0.360	-0.422	-0.299	0.697	0.656	0.741	0.493	0.391	0.000	0.000
Fever	-0.350	-0.408	-0.292	0.705	0.665	0.747	0.558	0.430	0.000	0.000
Throat	-0.318	-0.381	-0.254	0.728	0.683	0.775	0.482	0.387	0.000	0.000
Respiratory Discomfort	0.297	0.241	0.353	1.346	1.272	1.424	0.383	0.511	0.000	0.000
Immunosuppression	0.291	0.147	0.435	1.338	1.158	1.545	0.459	0.558	0.000	0.000
Diabetes	0.290	0.231	0.349	1.337	1.260	1.418	0.420	0.585	0.000	0.000
Dyspnea	0.284	0.225	0.343	1.329	1.252	1.410	0.369	0.495	0.000	0.000
Asthma	-0.263	-0.419	-0.107	0.769	0.657	0.899	0.465	0.358	0.000	0.001
Contact Birds Pigs	-0.259	-0.531	0.013	0.772	0.588	1.013	0.463	0.373	0.015	0.062
Gender F	-0.244	-0.294	-0.193	0.784	0.745	0.824	0.470	0.450	0.003	0.000
Hematologic Disease	0.233	-0.020	0.487	1.263	0.980	1.627	0.460	0.589	0.000	0.071
Other Risks	0.230	0.173	0.287	1.258	1.189	1.332	0.434	0.539	0.000	0.000
Diarrhea	-0.225	-0.302	-0.147	0.799	0.739	0.863	0.475	0.377	0.000	0.000
Another Chronic Pneumopathy	0.196	0.069	0.323	1.217	1.071	1.381	0.454	0.636	0.000	0.002
Schooling Medium 1-3	-0.165	-0.249	-0.080	0.848	0.779	0.923	0.475	0.358	0.000	0.000
Cardiovascular Disease	0.078	0.022	0.133	1.081	1.022	1.142	0.407	0.571	0.000	0.006
Vomiting	-0.043	-0.142	0.056	0.958	0.868	1.058	0.467	0.393	0.000	0.396
Schooling Elem 1-5	-0.037	-0.132	0.057	0.963	0.876	1.059	0.454	0.555	0.000	0.440

Recursive Feature Elimination:

Number of features selected
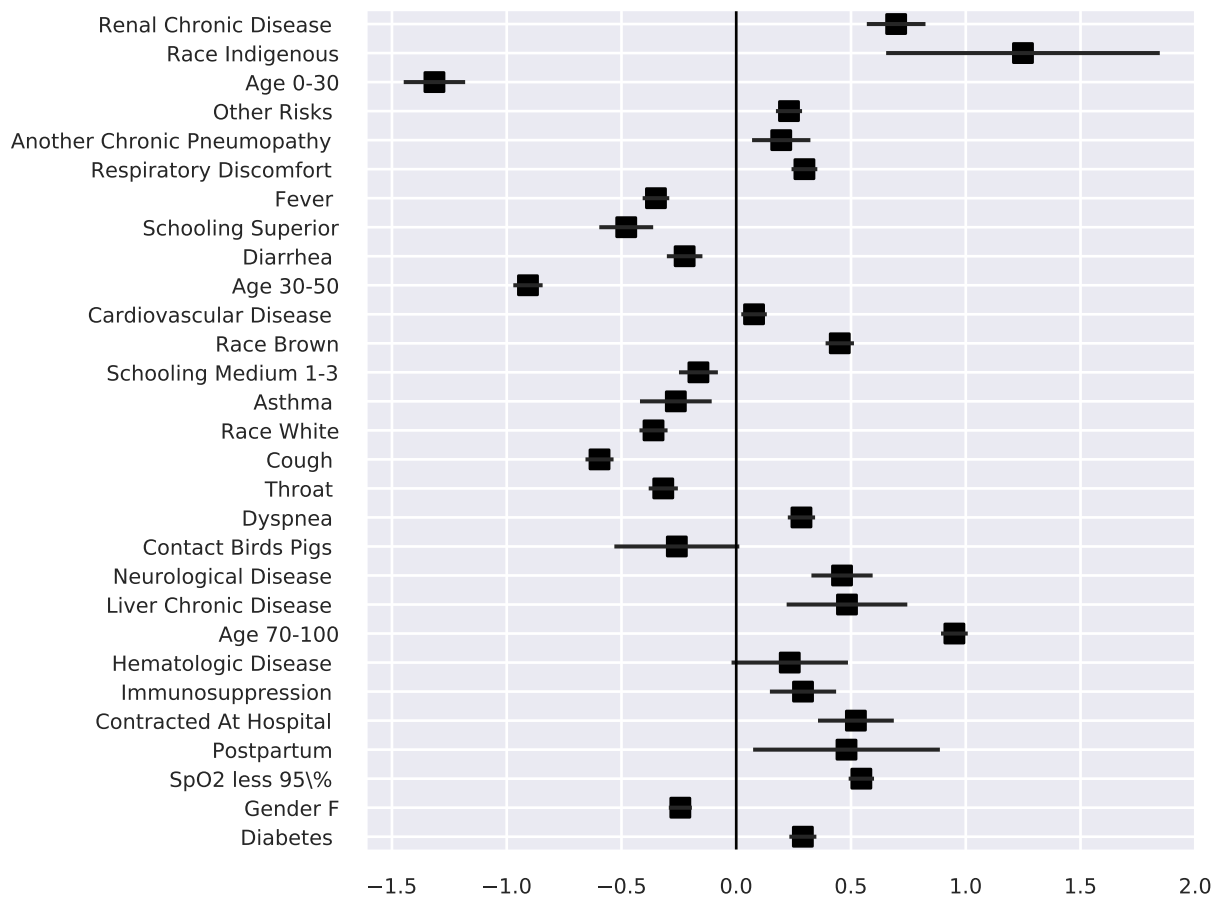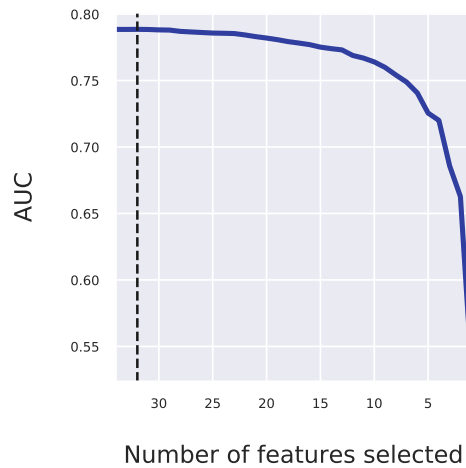
Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.681	0.681	0.668	0.686
F1w	0.681	0.681	0.667	0.686
AUC	0.751	0.752	0.732	0.753
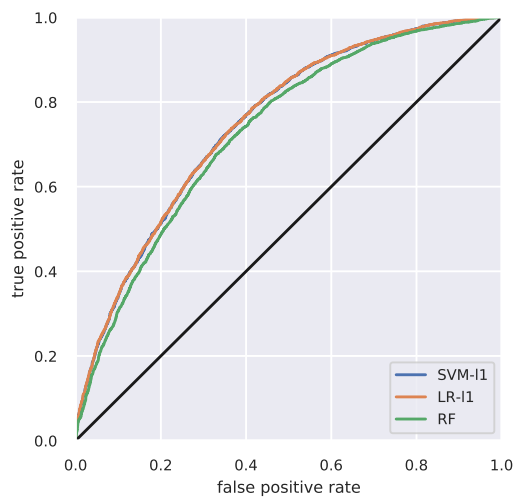
Coefficients:

	SVM-l1	LR-l1
Race Indigenous	1.000	0.926
Age 70-100	0.922	0.779
Renal Chronic Disease	0.587	0.556
SpO2 less 95\%	0.473	0.443
Contracted At Hospital	0.443	0.425
Liver Chronic Disease	0.415	0.377
Race Brown	0.404	0.375
Neurological Disease	0.376	0.363
Postpartum	0.352	0.347
Dyspnea	0.266	0.254
Respiratory Discomfort	0.270	0.248
Diabetes	0.263	0.239
Immunosuppression	0.248	0.235
Other Risks	0.205	0.195
Hematologic Disease	0.186	0.180
Another Chronic Pneumopathy	0.171	0.157
Cardiovascular Disease	0.080	0.074
Schooling Elem 1-5	-0.022	-0.024
Vomiting	-0.035	-0.031
Schooling Medium 1-3	-0.132	-0.124
Gender F	-0.177	-0.172
Diarrhea	-0.184	-0.174
Contact Birds Pigs	-0.207	-0.184
Asthma	-0.218	-0.203
Fever	-0.266	-0.242
Throat	-0.263	-0.255
Race White	-0.279	-0.266
Schooling Superior	-0.363	-0.368
Other Symptoms	-0.417	-0.396
Cough	-0.458	-0.432
Age 30-50	-0.745	-0.688
Age 0-30	-0.991	-1.000

2.2 Mortality (previous) small

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	-1.646	-1.778	-1.515	0.193	0.169	0.220	0.480	0.149	0.000	0.000
Race Indigenous	1.392	0.851	1.934	4.024	2.341	6.917	0.460	0.705	0.000	0.000
Age 30-50	-1.128	-1.188	-1.068	0.324	0.305	0.344	0.548	0.221	0.000	0.000
Age 70-100	0.886	0.832	0.939	2.425	2.299	2.558	0.347	0.709	0.000	0.000
Cough	-0.793	-0.840	-0.747	0.452	0.432	0.474	0.572	0.429	0.000	0.000
Schooling Superior	-0.701	-0.814	-0.587	0.496	0.443	0.556	0.474	0.250	0.000	0.000
BMI 35-40	0.692	0.457	0.926	1.997	1.580	2.524	0.459	0.546	0.011	0.000
SpO2 less 95\%	0.643	0.596	0.691	1.903	1.815	1.995	0.333	0.547	0.000	0.000
Contracted At Hospital	0.610	0.453	0.767	1.841	1.573	2.154	0.455	0.642	0.000	0.000
Race Brown	0.586	0.533	0.640	1.798	1.704	1.897	0.425	0.550	0.000	0.000
Hematologic Disease	0.332	0.093	0.571	1.394	1.098	1.771	0.459	0.598	0.000	0.006
Immunosuppression	0.313	0.176	0.451	1.368	1.192	1.569	0.457	0.553	0.000	0.000
Vomiting	-0.241	-0.333	-0.149	0.786	0.717	0.862	0.465	0.399	0.000	0.000
Other Risks	0.156	0.102	0.210	1.169	1.107	1.234	0.432	0.541	0.000	0.000
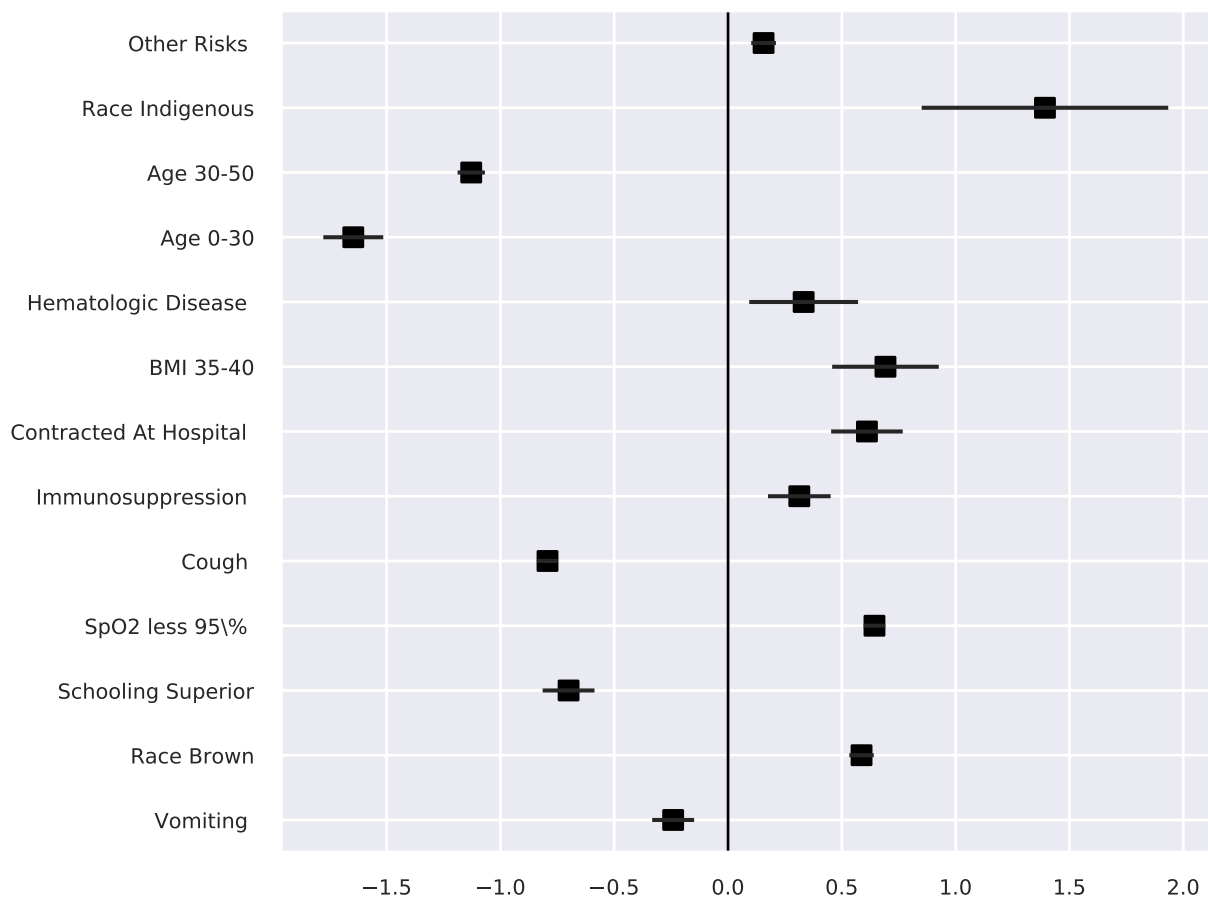
Recursive Feature Elimination:
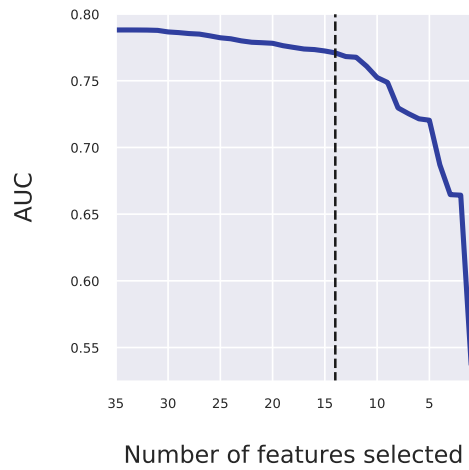
Coefficients:

	SVM-l1	LR-l1
Race Indigenous	0.962	0.876
Age 70-100	0.801	0.654
SpO2 less 95\%	0.530	0.485
BMI 35-40	0.504	0.455
Contracted At Hospital	0.464	0.436
Race Brown	0.457	0.419
Immunosuppression	0.251	0.230
Hematologic Disease	0.247	0.228
Other Risks	0.158	0.144
Vomiting	-0.140	-0.132
Cough	-0.427	-0.393
Schooling Superior	-0.421	-0.425
Age 30-50	-0.744	-0.672
Age 0-30	-1.000	-1.000

Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.661	0.662	0.655	0.663
F1w	0.660	0.662	0.653	0.662
AUC	0.722	0.722	0.717	0.724
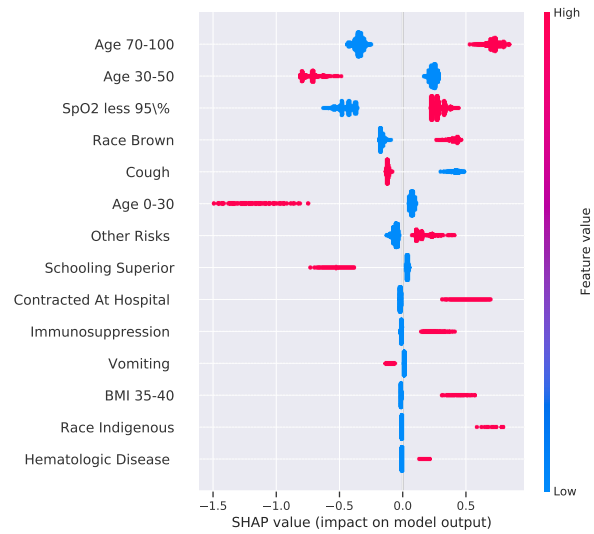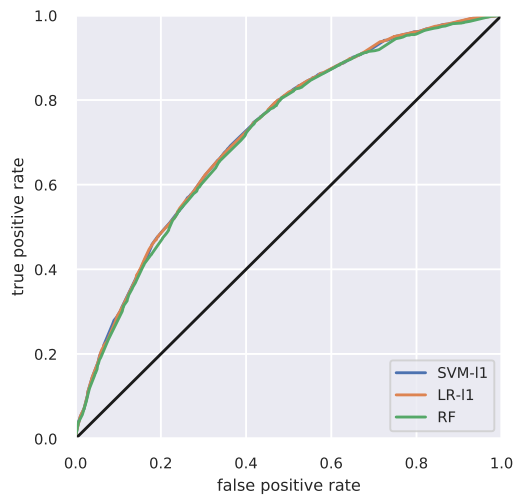
2.3   Mortality (advanced)

Include variables: Antiviral, ICU, Ventilator

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Ventilator Invasive	2.162	2.077	2.247	8.692	7.982	9.464	0.343	0.857	0.000	0.000
Age 0-30	-1.469	-1.626	-1.311	0.230	0.197	0.269	0.480	0.151	0.000	0.000
Race Indigenous	1.356	0.764	1.947	3.879	2.146	7.011	0.460	0.718	0.000	0.000
Age 70-100	1.048	0.982	1.113	2.851	2.671	3.044	0.350	0.708	0.000	0.000
Age 30-50	-0.862	-0.935	-0.789	0.422	0.393	0.454	0.547	0.228	0.000	0.000
Schooling Superior	-0.673	-0.808	-0.538	0.510	0.446	0.584	0.474	0.248	0.000	0.000
Down Syndrome	0.598	0.054	1.142	1.818	1.056	3.133	0.461	0.618	0.025	0.031
Renal Chronic Disease	0.594	0.456	0.732	1.811	1.578	2.079	0.449	0.705	0.000	0.000
Other Symptoms	-0.580	-0.643	-0.518	0.560	0.526	0.596	0.510	0.350	0.000	0.000
Race Brown	0.576	0.507	0.645	1.779	1.661	1.905	0.427	0.549	0.000	0.000
Neurological Disease	0.520	0.381	0.658	1.681	1.463	1.932	0.451	0.697	0.000	0.000
Liver Chronic Disease	0.514	0.223	0.805	1.672	1.250	2.236	0.459	0.648	0.000	0.001
BMI 30-35	-0.502	-0.669	-0.334	0.605	0.512	0.716	0.519	0.460	0.027	0.000
ICU	0.484	0.418	0.550	1.622	1.519	1.733	0.356	0.662	0.000	0.000
Contracted At Hospital	0.464	0.281	0.646	1.590	1.325	1.908	0.456	0.645	0.000	0.000
Cough	-0.450	-0.521	-0.379	0.638	0.594	0.684	0.577	0.430	0.000	0.000
Antiviral Use	-0.424	-0.482	-0.366	0.654	0.617	0.694	0.471	0.444	0.000	0.000
SpO2 less 95\%	0.413	0.352	0.474	1.511	1.422	1.607	0.331	0.549	0.000	0.000
Asthma	-0.358	-0.530	-0.186	0.699	0.589	0.830	0.464	0.356	0.000	0.000
Race White	-0.356	-0.424	-0.287	0.700	0.654	0.750	0.493	0.389	0.000	0.000
Fever	-0.339	-0.405	-0.272	0.713	0.667	0.762	0.560	0.429	0.000	0.000
Contact Birds Pigs	-0.323	-0.624	-0.022	0.724	0.536	0.979	0.462	0.354	0.002	0.036
Postpartum	0.284	-0.185	0.754	1.329	0.831	2.125	0.462	0.326	0.013	0.235
Immunosuppression	0.268	0.116	0.420	1.307	1.123	1.523	0.457	0.562	0.000	0.001
Throat	-0.231	-0.300	-0.161	0.794	0.741	0.851	0.482	0.382	0.000	0.000
Dyspnea	0.231	0.163	0.298	1.259	1.177	1.347	0.363	0.496	0.000	0.000
Hematologic Disease	0.216	-0.057	0.489	1.241	0.945	1.630	0.460	0.580	0.000	0.120
Respiratory Discomfort	0.213	0.151	0.275	1.237	1.163	1.317	0.382	0.510	0.000	0.000
Schooling Elem 1-5	0.203	0.101	0.305	1.225	1.106	1.357	0.451	0.579	0.000	0.000
Diabetes	0.187	0.122	0.252	1.205	1.130	1.286	0.421	0.580	0.000	0.000
Gender F	-0.186	-0.242	-0.129	0.830	0.785	0.879	0.471	0.447	0.000	0.000
Diarrhea	-0.184	-0.268	-0.099	0.832	0.765	0.905	0.474	0.377	0.000	0.000
Other Risks	0.179	0.116	0.243	1.197	1.123	1.275	0.433	0.541	0.000	0.000
Another Chronic Pneumopathy	0.154	0.017	0.292	1.167	1.017	1.339	0.453	0.639	0.000	0.028
Schooling Medium 1-3	-0.151	-0.246	-0.057	0.860	0.782	0.945	0.474	0.355	0.000	0.002
BMI 35-40	0.081	-0.219	0.382	1.085	0.803	1.466	0.460	0.538	0.033	0.595
Cardiovascular Disease	0.059	-0.002	0.121	1.061	0.998	1.129	0.406	0.571	0.000	0.058
Vomiting	0.055	-0.052	0.161	1.056	0.949	1.175	0.466	0.401	0.000	0.315
Gestational Age	0.002	-0.025	0.028	1.002	0.976	1.028	0.625	0.043	0.018	0.909

Recursive Feature Elimination:

Number of features selected
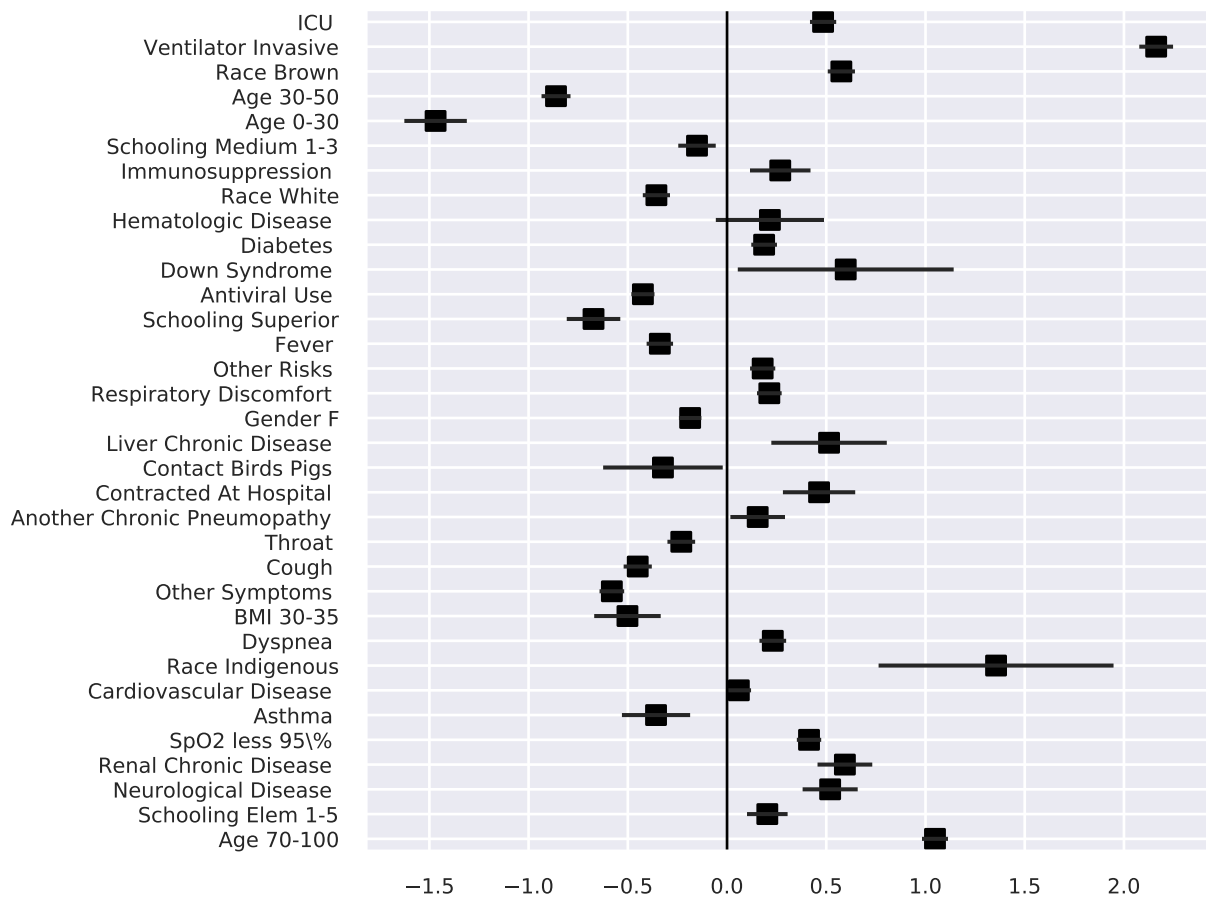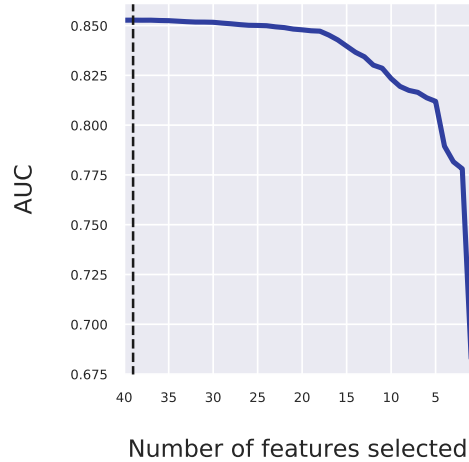
Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.741	0.741	0.737	0.745
F1w	0.740	0.741	0.737	0.744
AUC	0.826	0.826	0.817	0.829
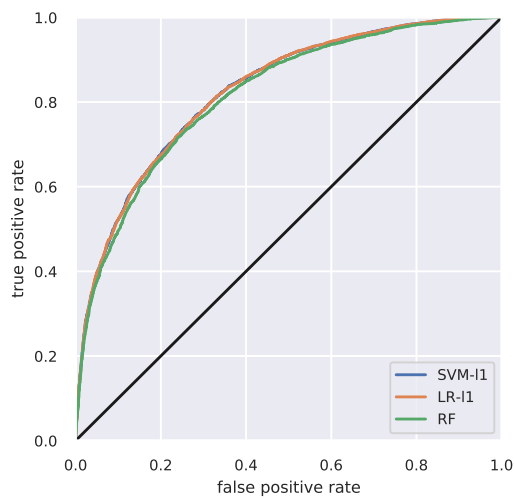
Coefficients:

	SVM-l1	LR-l1
Ventilator Invasive	1.000	1.000
Race Indigenous	0.659	0.586
Age 70-100	0.540	0.486
Renal Chronic Disease	0.287	0.274
Race Brown	0.269	0.268
Down Syndrome	0.255	0.243
Neurological Disease	0.255	0.238
Liver Chronic Disease	0.240	0.230
ICU	0.223	0.225
Contracted At Hospital	0.218	0.213
SpO2 less 95\%	0.188	0.192
Immunosuppression	0.121	0.123
Dyspnea	0.106	0.108
Postpartum	0.105	0.106
Respiratory Discomfort	0.100	0.099
Schooling Elem 1-5	0.102	0.094
Hematologic Disease	0.083	0.092
Diabetes	0.088	0.087
Other Risks	0.083	0.084
BMI 35-40	0.088	0.075
Another Chronic Pneumopathy	0.076	0.070
Cardiovascular Disease	0.027	0.029
Vomiting	0.025	0.024
Gestational Age	0.006	0.007
Schooling Medium 1-3	-0.066	-0.068
Gender F	-0.080	-0.081
Diarrhea	-0.081	-0.084
Throat	-0.105	-0.106
Contact Birds Pigs	-0.139	-0.137
Fever	-0.154	-0.154
Asthma	-0.146	-0.162
Race White	-0.153	-0.163
BMI 30-35	-0.164	-0.170
Antiviral Use	-0.189	-0.195
Cough	-0.205	-0.205
Other Symptoms	-0.251	-0.267
Schooling Superior	-0.271	-0.308
Age 30-50	-0.361	-0.396
Age 0-30	-0.566	-0.671
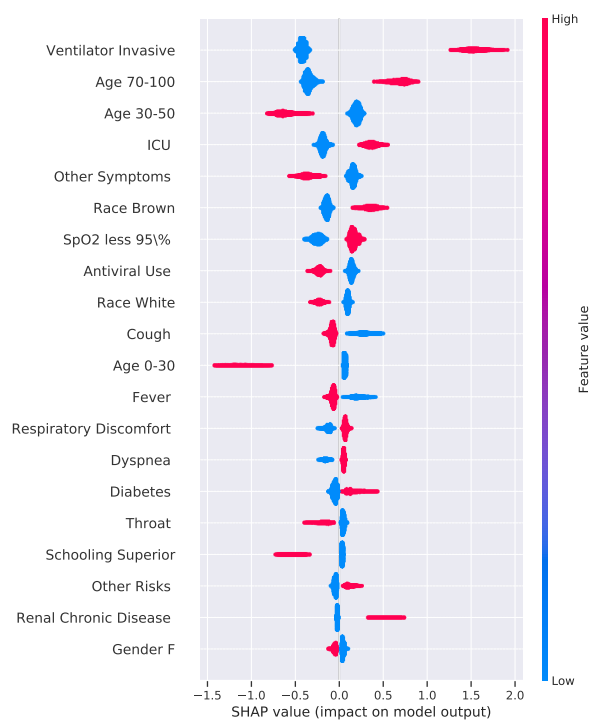
2.4 Mortality (advanced) small

Include variables: Antiviral, ICU, Ventilator

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Ventilator Invasive	2.241	2.157	2.324	9.400	8.648	10.218	0.344	0.861	0.0	0.000
Race Indigenous	1.241	0.674	1.808	3.459	1.962	6.098	0.462	0.704	0.0	0.000
Age 70-100	1.233	1.175	1.291	3.431	3.237	3.636	0.350	0.711	0.0	0.000
Cough	-1.221	-1.270	-1.172	0.295	0.281	0.310	0.573	0.432	0.0	0.000
Schooling Superior	-0.999	-1.120	-0.877	0.368	0.326	0.416	0.475	0.262	0.0	0.000
Postpartum	-0.944	-1.368	-0.521	0.389	0.255	0.594	0.463	0.274	0.0	0.000
Renal Chronic Disease	0.618	0.487	0.748	1.855	1.627	2.113	0.451	0.701	0.0	0.000
Antiviral Use	-0.553	-0.607	-0.499	0.575	0.545	0.607	0.473	0.446	0.0	0.000
Liver Chronic Disease	0.544	0.267	0.821	1.723	1.306	2.272	0.461	0.661	0.0	0.000
Race Brown	0.381	0.325	0.437	1.464	1.384	1.549	0.432	0.541	0.0	0.000
Neurological Disease	0.371	0.234	0.508	1.449	1.263	1.661	0.452	0.698	0.0	0.000
Vomiting	-0.360	-0.457	-0.264	0.697	0.633	0.768	0.468	0.395	0.0	0.000
SpO2 less 95\%	0.298	0.246	0.350	1.348	1.279	1.420	0.335	0.549	0.0	0.000
ICU	0.226	0.163	0.288	1.253	1.177	1.334	0.357	0.663	0.0	0.000
Cardiovascular Disease	0.076	0.020	0.132	1.079	1.020	1.141	0.408	0.569	0.0	0.008
Other Risks	-0.014	-0.073	0.045	0.986	0.930	1.046	0.435	0.542	0.0	0.644
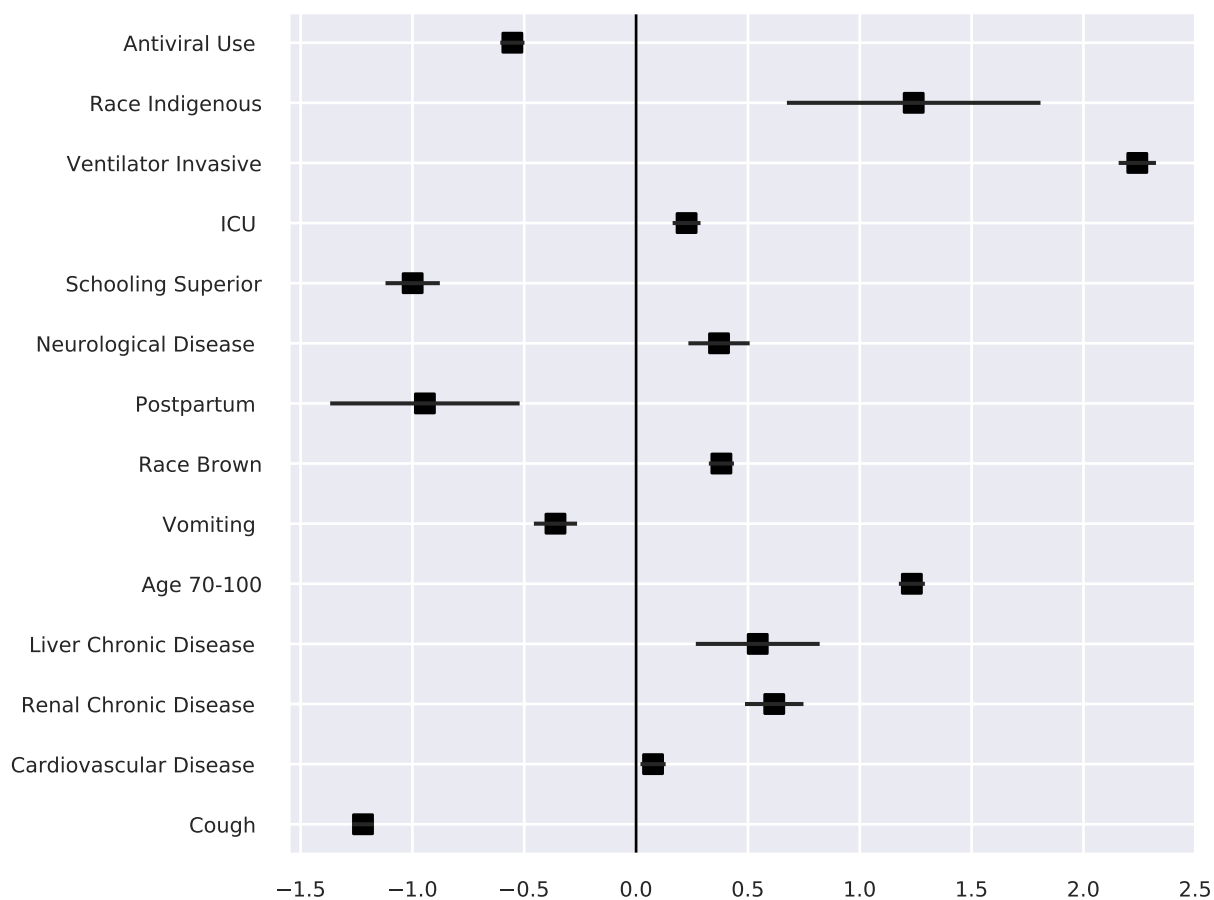
Recursive Feature Elimination:
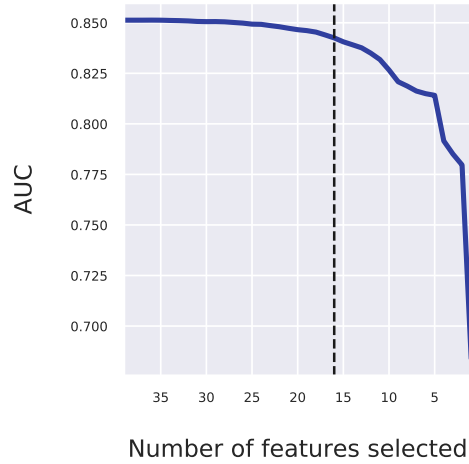
Coefficients:

	SVM-l1	LR-l1
Ventilator Invasive	1.000	1.000
Age 70-100	0.678	0.647
Race Indigenous	0.649	0.606
Renal Chronic Disease	0.327	0.323
Liver Chronic Disease	0.317	0.303
Race Brown	0.279	0.285
SpO2 less 95\%	0.251	0.260
ICU	0.194	0.198
Neurological Disease	0.214	0.194
Cardiovascular Disease	0.100	0.104
Other Risks	0.081	0.082
Vomiting	-0.079	-0.083
Antiviral Use	-0.178	-0.190
Cough	-0.194	-0.199
Postpartum	-0.217	-0.246
Schooling Superior	-0.290	-0.353

Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.739	0.739	0.734	0.738
F1w	0.739	0.739	0.733	0.737
AUC	0.812	0.812	0.805	0.813
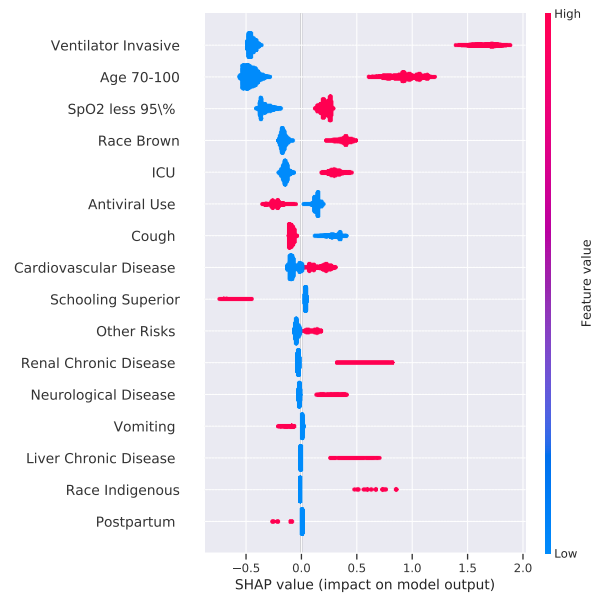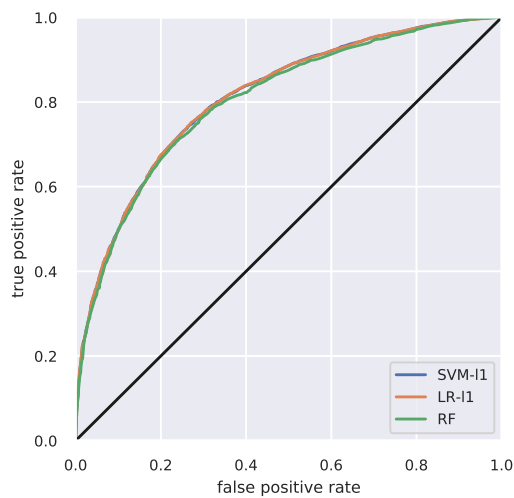
2.5   ICU

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 30-50	-0.835	-0.913	-0.756	0.434	0.401	0.470	0.369	0.275	0.000	0.000
Age 0-30	-0.789	-0.909	-0.668	0.454	0.403	0.513	0.349	0.262	0.000	0.000
Age 50-70	-0.649	-0.722	-0.576	0.523	0.486	0.562	0.336	0.355	0.008	0.000
Age 70-100	-0.569	-0.647	-0.491	0.566	0.524	0.612	0.317	0.401	0.000	0.000
Schooling Elem 1-5	-0.477	-0.574	-0.380	0.621	0.563	0.684	0.349	0.273	0.000	0.000
SpO2 less 95\%	0.453	0.400	0.506	1.573	1.491	1.659	0.266	0.396	0.000	0.000
Xray Torax Result Consolidation	0.403	0.274	0.533	1.497	1.315	1.704	0.340	0.456	0.000	0.000
Renal Chronic Disease	0.398	0.289	0.508	1.489	1.335	1.661	0.336	0.497	0.000	0.000
Contracted At Hospital	0.376	0.234	0.519	1.457	1.263	1.680	0.340	0.468	0.000	0.000
Cough	-0.361	-0.419	-0.302	0.697	0.657	0.739	0.401	0.328	0.000	0.000
Race Brown	-0.360	-0.420	-0.300	0.698	0.657	0.741	0.362	0.295	0.000	0.000
Other Risks	0.350	0.297	0.403	1.419	1.346	1.496	0.315	0.423	0.000	0.000
Throat	-0.349	-0.411	-0.288	0.705	0.663	0.750	0.363	0.272	0.000	0.000
Schooling Superior	0.294	0.192	0.396	1.342	1.211	1.486	0.341	0.377	0.020	0.000
Antiviral Use	0.293	0.245	0.342	1.341	1.277	1.408	0.313	0.392	0.000	0.000
Another Chronic Pneumopathy	0.246	0.132	0.360	1.279	1.141	1.433	0.338	0.462	0.000	0.000
Cardiovascular Disease	0.239	0.186	0.292	1.270	1.205	1.339	0.307	0.416	0.000	0.000
Gender F	-0.212	-0.259	-0.164	0.809	0.772	0.849	0.354	0.329	0.000	0.000
Schooling Elem 6-9	-0.192	-0.299	-0.085	0.825	0.742	0.918	0.345	0.309	0.020	0.000
Diabetes	0.172	0.116	0.227	1.187	1.123	1.255	0.320	0.415	0.000	0.000
Hematologic Disease	0.169	-0.051	0.389	1.184	0.950	1.475	0.342	0.436	0.004	0.132
Diarrhea	-0.135	-0.208	-0.062	0.873	0.812	0.940	0.350	0.303	0.000	0.000
Immunosuppression	0.131	0.000	0.262	1.140	1.000	1.299	0.341	0.412	0.000	0.050
Fever	-0.129	-0.186	-0.073	0.879	0.830	0.929	0.375	0.333	0.000	0.000
Race White	-0.127	-0.185	-0.069	0.881	0.831	0.933	0.338	0.355	0.038	0.000
Dyspnea	0.106	0.048	0.163	1.112	1.050	1.178	0.296	0.361	0.000	0.000
Schooling Medium 1-3	-0.088	-0.169	-0.006	0.916	0.845	0.994	0.349	0.302	0.000	0.035
Vomiting	-0.087	-0.180	0.006	0.917	0.835	1.006	0.347	0.303	0.000	0.068
Respiratory Discomfort	0.080	0.027	0.134	1.084	1.028	1.143	0.311	0.363	0.000	0.003
Neurological Disease	-0.018	-0.132	0.097	0.983	0.876	1.102	0.340	0.412	0.000	0.764

Recursive Feature Elimination:

Coefficients:

	SVM-l1	LR-l1
SpO2 less 95\%	1.000	1.000
Renal Chronic Disease	0.965	0.864
Xray Torax Result Consolidation	0.929	0.857
Contracted At Hospital	0.924	0.847
Other Risks	0.833	0.790
Schooling Superior	0.672	0.652
Antiviral Use	0.646	0.635
Cardiovascular Disease	0.576	0.547
Another Chronic Pneumopathy	0.581	0.512
Diabetes	0.409	0.384
Hematologic Disease	0.414	0.369
Dyspnea	0.323	0.333
Immunosuppression	0.313	0.289
Respiratory Discomfort	0.222	0.212
Age 70-100	0.167	0.166
Neurological Disease	-0.005	0.000
Age 50-70	-0.056	-0.034
Fever	-0.141	-0.132
Schooling Medium 1-3	-0.146	-0.157
Vomiting	-0.172	-0.172
Race White	-0.197	-0.189
Diarrhea	-0.253	-0.260
Age 0-30	-0.268	-0.285
Gender F	-0.354	-0.350
Schooling Elem 6-9	-0.399	-0.400
Age 30-50	-0.399	-0.405
Cough	-0.646	-0.621
Race Brown	-0.687	-0.683
Throat	-0.712	-0.748
Schooling Elem 1-5	-0.975	-0.992

Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.644	0.644	0.623	0.647
F1w	0.593	0.594	0.480	0.592
AUC	0.637	0.638	0.627	0.643
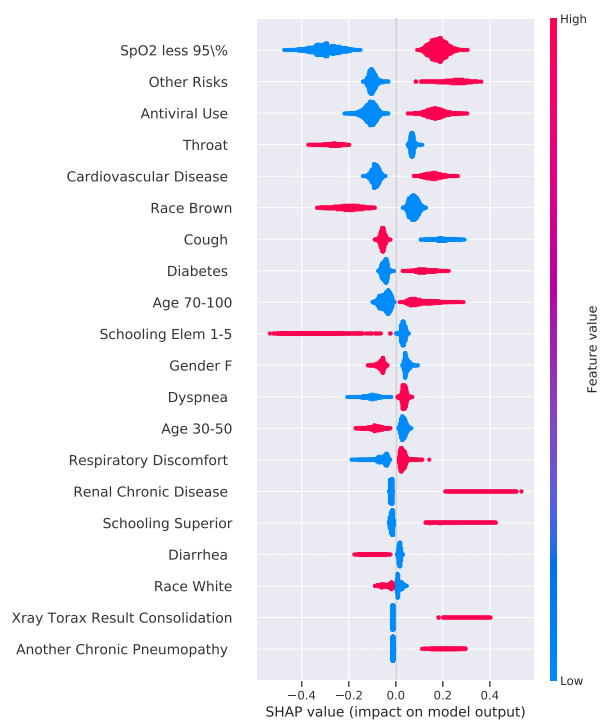
2.6 ICU small

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
BMI 30-35	-0.902	-0.961	-0.843	0.406	0.383	0.430	0.476	0.342	0.000	0.000
SpO2 less 95\%	0.526	0.478	0.575	1.693	1.613	1.777	0.268	0.396	0.000	0.000
Xray Torax Result Consolidation	0.503	0.376	0.629	1.653	1.456	1.876	0.340	0.482	0.000	0.000
Renal Chronic Disease	0.448	0.341	0.556	1.566	1.407	1.743	0.337	0.492	0.000	0.000
Throat	-0.388	-0.448	-0.328	0.678	0.639	0.721	0.365	0.271	0.000	0.000
Schooling Elem 1-5	-0.373	-0.466	-0.280	0.689	0.628	0.756	0.349	0.285	0.000	0.000
Other Risks	0.365	0.313	0.417	1.440	1.367	1.517	0.318	0.421	0.000	0.000
Cough	-0.361	-0.416	-0.306	0.697	0.659	0.736	0.404	0.328	0.000	0.000
Contracted At Hospital	0.355	0.214	0.497	1.426	1.238	1.643	0.341	0.469	0.000	0.000
Cardiovascular Disease	0.337	0.288	0.386	1.401	1.334	1.471	0.309	0.414	0.000	0.000
Antiviral Use	0.298	0.250	0.346	1.347	1.284	1.414	0.314	0.393	0.000	0.000
Liver Chronic Disease	0.287	0.052	0.522	1.332	1.053	1.685	0.344	0.442	0.006	0.017
Race Brown	-0.283	-0.337	-0.230	0.753	0.714	0.795	0.362	0.298	0.000	0.000
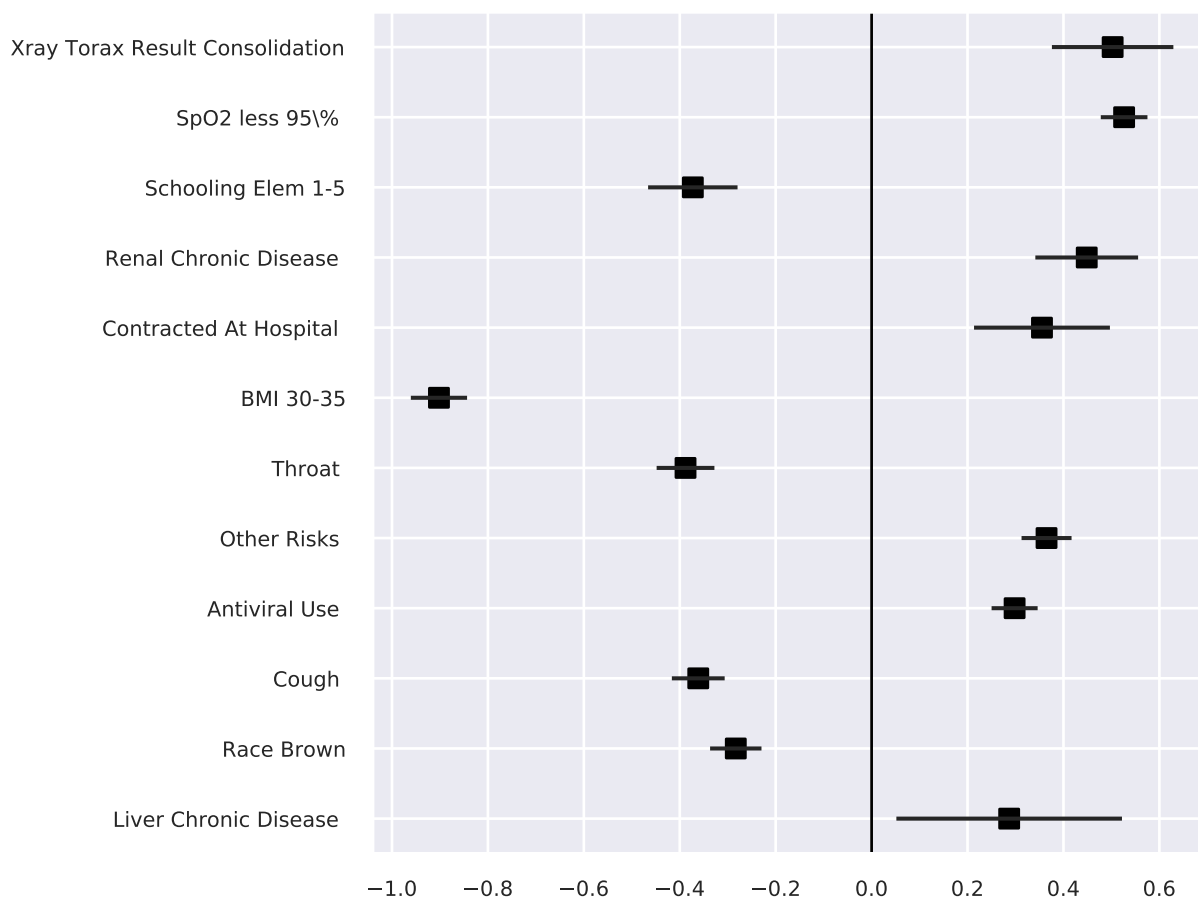
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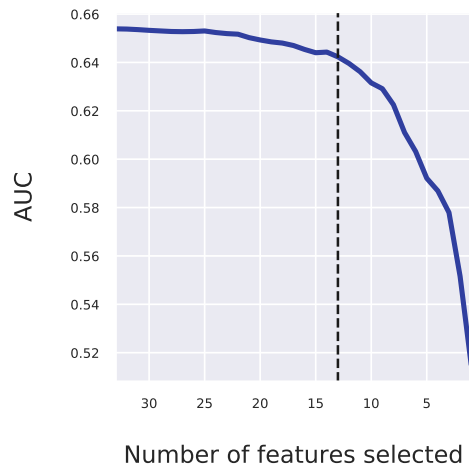
Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.642	0.642	0.631	0.642
F1w	0.579	0.579	0.497	0.567
AUC	0.624	0.625	0.620	0.623
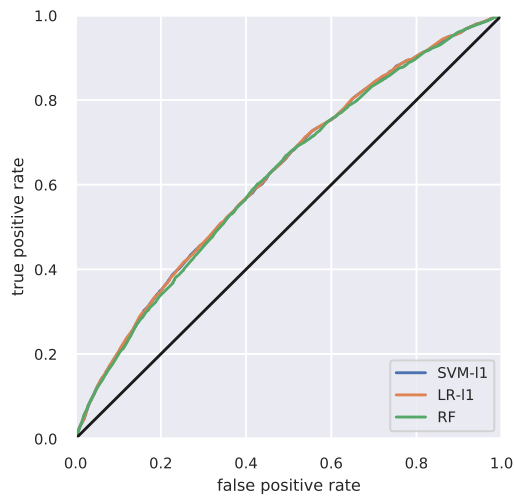
Coefficients:

	SVM-l1	LR-l1
SpO2 less 95\%	0.991	1.000
Xray Torax Result Consolidation	1.000	0.926
Renal Chronic Disease	0.897	0.822
Other Risks	0.714	0.686
Contracted At Hospital	0.726	0.662
Cardiovascular Disease	0.658	0.639
Antiviral Use	0.564	0.561
Liver Chronic Disease	0.560	0.515
Race Brown	-0.483	-0.492
Cough	-0.594	-0.575
Schooling Elem 1-5	-0.650	-0.670
Throat	-0.662	-0.697
BMI 30-35	-0.825	-0.748
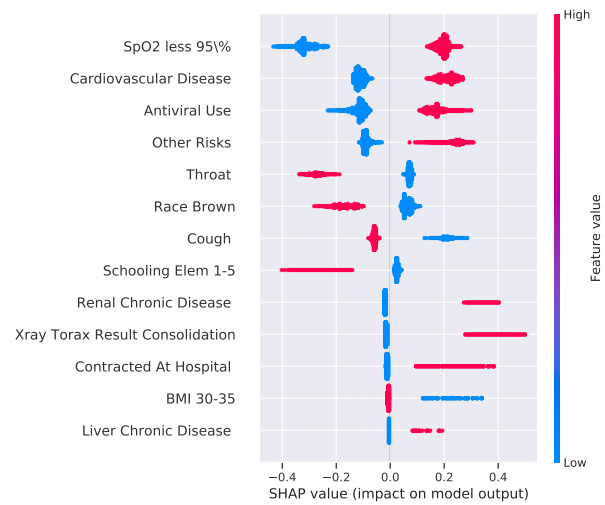
2.7   Ventilator

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
BMI 30-35	-1.180	-1.320	-1.041	0.307	0.267	0.353	0.341	0.227	0.000	0.000
Age 30-50	-0.917	-1.054	-0.780	0.400	0.349	0.459	0.261	0.143	0.000	0.000
Age 0-30	-0.888	-1.072	-0.704	0.412	0.342	0.495	0.235	0.129	0.000	0.000
SpO2 less 95\%	0.620	0.557	0.684	1.860	1.745	1.982	0.135	0.292	0.000	0.000
Cough	-0.510	-0.576	-0.444	0.601	0.562	0.642	0.292	0.212	0.000	0.000
Age 50-70	-0.449	-0.580	-0.318	0.638	0.560	0.728	0.216	0.249	0.000	0.000
Xray Torax Result Consolidation	0.414	0.272	0.557	1.514	1.313	1.745	0.226	0.318	0.000	0.000
Dyspnea	0.379	0.308	0.450	1.460	1.360	1.568	0.147	0.259	0.000	0.000
Respiratory Discomfort	0.364	0.301	0.427	1.439	1.351	1.533	0.162	0.271	0.000	0.000
Throat	-0.334	-0.406	-0.262	0.716	0.666	0.769	0.242	0.181	0.000	0.000
Age 70-100	-0.334	-0.469	-0.198	0.716	0.626	0.820	0.199	0.295	0.000	0.000
Antiviral Use	0.305	0.249	0.360	1.356	1.283	1.433	0.203	0.271	0.000	0.000
Other Risks	0.279	0.219	0.339	1.322	1.245	1.403	0.208	0.289	0.000	0.000
Contracted At Hospital	0.267	0.114	0.421	1.307	1.120	1.524	0.227	0.321	0.000	0.001
Diabetes	0.263	0.202	0.325	1.301	1.224	1.383	0.203	0.306	0.000	0.000
Diarrhea	-0.262	-0.350	-0.174	0.770	0.705	0.840	0.237	0.180	0.000	0.000
Immunosuppression	0.250	0.108	0.392	1.284	1.114	1.479	0.227	0.296	0.000	0.001
Renal Chronic Disease	0.236	0.120	0.353	1.267	1.127	1.424	0.224	0.340	0.000	0.000
Race White	-0.211	-0.278	-0.145	0.810	0.757	0.865	0.237	0.212	0.000	0.000
Gender F	-0.206	-0.261	-0.151	0.814	0.770	0.860	0.238	0.217	0.002	0.000
BMI 35-40	-0.173	-0.438	0.091	0.841	0.645	1.096	0.228	0.384	0.000	0.199
Fever	-0.171	-0.235	-0.107	0.843	0.791	0.899	0.266	0.217	0.000	0.000
Cardiovascular Disease	0.154	0.094	0.213	1.166	1.099	1.237	0.199	0.288	0.000	0.000
Other Symptoms	-0.147	-0.209	-0.086	0.863	0.812	0.918	0.242	0.200	0.000	0.000
Another Chronic Pneumopathy	0.137	0.014	0.260	1.147	1.014	1.297	0.225	0.323	0.000	0.029
Schooling Medium 1-3	-0.112	-0.207	-0.017	0.894	0.813	0.983	0.234	0.188	0.000	0.021
Vomiting	-0.097	-0.208	0.014	0.907	0.812	1.014	0.232	0.191	0.001	0.085
Schooling Superior	-0.086	-0.215	0.044	0.918	0.807	1.045	0.233	0.174	0.000	0.194
Race Brown	0.043	-0.022	0.109	1.044	0.978	1.115	0.221	0.251	0.000	0.196

Recursive Feature Elimination:

Number of features selected

Coefficients:

	SVM-l1	LR-l1
SpO2 less 95\%	1.000	1.000
BMI 35-40	0.914	0.712
Dyspnea	0.646	0.654
Xray Torax Result Consolidation	0.778	0.635
Respiratory Discomfort	0.641	0.585
Antiviral Use	0.515	0.480
Other Risks	0.520	0.455
Contracted At Hospital	0.545	0.435
Diabetes	0.505	0.423
Immunosuppression	0.444	0.386
Renal Chronic Disease	0.505	0.383
Cardiovascular Disease	0.298	0.266
Another Chronic Pneumopathy	0.293	0.205
Age 70-100	0.172	0.135
Race Brown	0.101	0.095
Age 50-70	-0.051	-0.043
Schooling Superior	-0.076	-0.106
Vomiting	-0.157	-0.137
Schooling Medium 1-3	-0.157	-0.152
Other Symptoms	-0.192	-0.185
Fever	-0.253	-0.206
Gender F	-0.288	-0.275
Race White	-0.298	-0.285
Diarrhea	-0.394	-0.386
Throat	-0.535	-0.525
BMI 30-35	-0.626	-0.525
Age 0-30	-0.576	-0.674
Cough	-0.838	-0.723
Age 30-50	-0.682	-0.738

Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.742	0.742	0.744	0.742
F1w	0.668	0.666	0.634	0.657
AUC	0.668	0.669	0.657	0.671
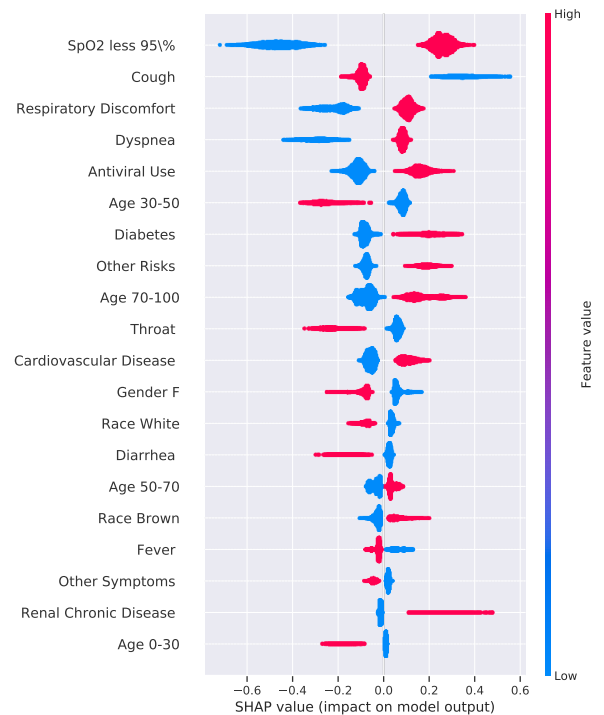
2.8   Ventilator small

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
BMI 30-35	-1.601	-1.678	-1.524	0.202	0.187	0.218	0.339	0.224	0.0	0.0
Age 0-30	-0.519	-0.656	-0.381	0.595	0.519	0.683	0.232	0.133	0.0	0.0
Respiratory Discomfort	0.499	0.440	0.557	1.647	1.553	1.746	0.163	0.266	0.0	0.0
Cough	-0.489	-0.553	-0.425	0.613	0.575	0.654	0.280	0.212	0.0	0.0
Dyspnea	0.463	0.397	0.530	1.589	1.487	1.699	0.148	0.255	0.0	0.0
Throat	-0.411	-0.482	-0.340	0.663	0.618	0.712	0.241	0.174	0.0	0.0
Age 70-100	0.366	0.311	0.422	1.443	1.364	1.525	0.197	0.291	0.0	0.0
Antiviral Use	0.295	0.240	0.349	1.343	1.272	1.417	0.203	0.264	0.0	0.0
Other Risks	0.261	0.203	0.319	1.298	1.225	1.375	0.207	0.282	0.0	0.0
Immunosuppression	0.250	0.112	0.389	1.284	1.119	1.475	0.224	0.290	0.0	0.0
Schooling Superior	-0.241	-0.366	-0.117	0.786	0.694	0.889	0.230	0.170	0.0	0.0
Fever	-0.206	-0.267	-0.144	0.814	0.765	0.866	0.259	0.216	0.0	0.0

Recursive Feature Elimination:

Number of features selected

Coefficients:

	SVM-l1	LR-l1
Dyspnea	0.783	0.991
Respiratory Discomfort	0.825	0.973
Age 70-100	0.645	0.699
Antiviral Use	0.498	0.566
Other Risks	0.498	0.536
Immunosuppression	0.456	0.469
Fever	-0.221	-0.235
Schooling Superior	-0.272	-0.361
Cough	-0.673	-0.727
Throat	-0.608	-0.743
Age 0-30	-0.548	-0.791
BMI 30-35	-1.000	-1.000
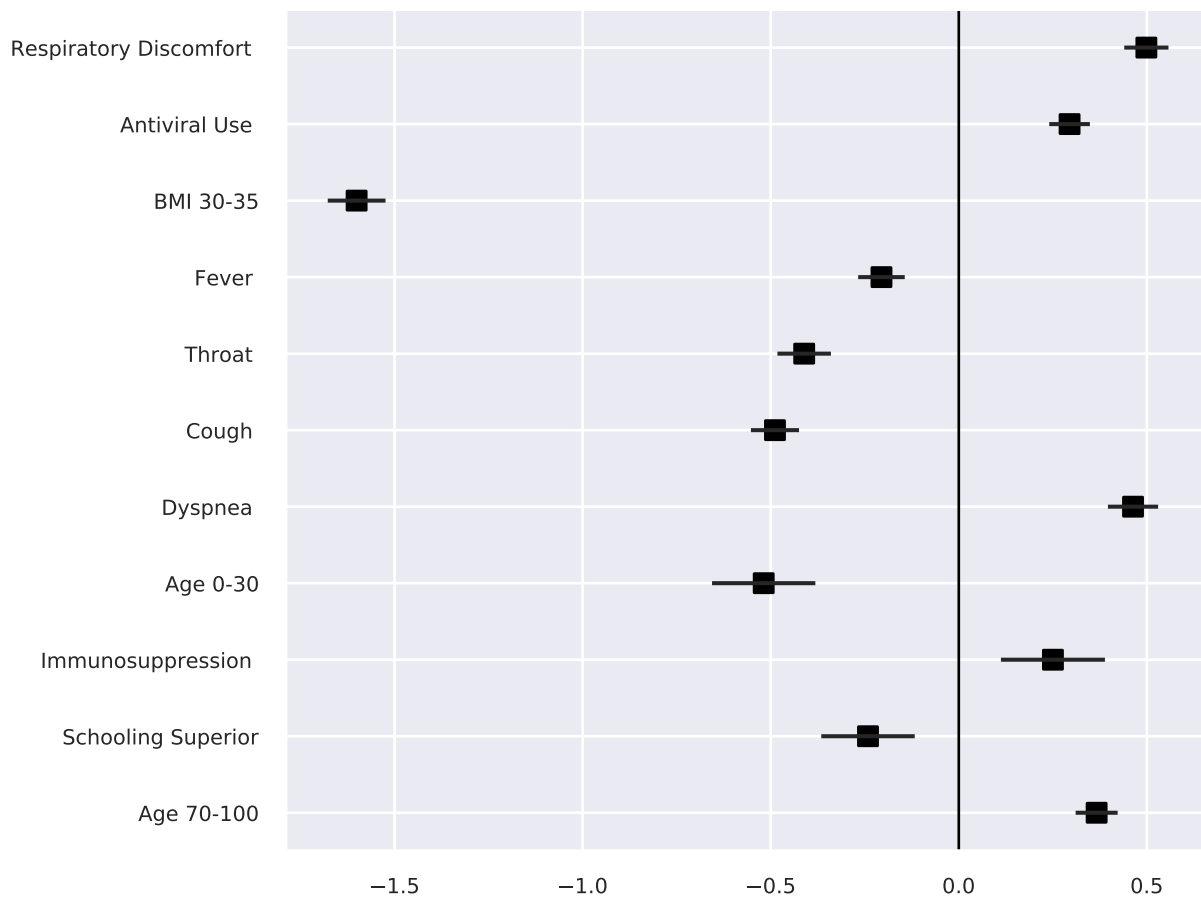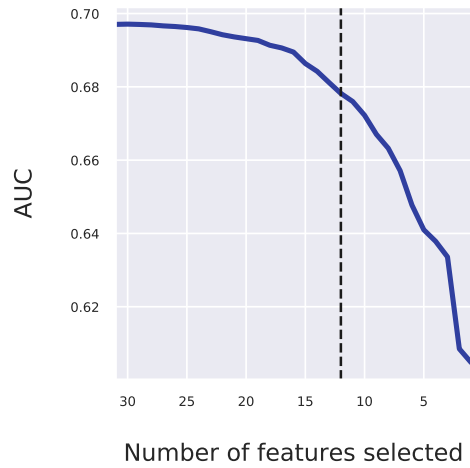
Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.737	0.738	0.737	0.738
F1w	0.636	0.636	0.625	0.630
AUC	0.643	0.644	0.642	0.646
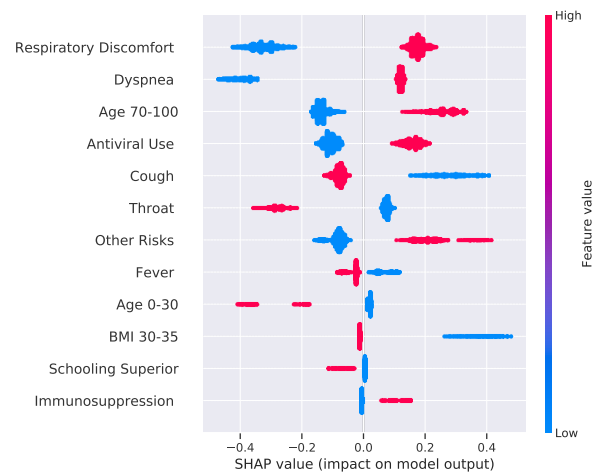
2.9 Ventilator with ICU

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	-2.633	-2.818	-2.448	0.072	0.060	0.086	0.232	0.129	0.000	0.000
Age 30-50	-2.615	-2.737	-2.494	0.073	0.065	0.083	0.257	0.142	0.000	0.000
ICU	2.523	2.458	2.588	12.467	11.685	13.301	0.070	0.527	0.000	0.000
Age 50-70	-2.141	-2.252	-2.031	0.117	0.105	0.131	0.214	0.245	0.000	0.000
Age 70-100	-2.120	-2.234	-2.007	0.120	0.107	0.134	0.196	0.291	0.000	0.000
Cough	-0.541	-0.617	-0.466	0.582	0.540	0.628	0.285	0.210	0.000	0.000
SpO2 less 95\%	0.473	0.401	0.545	1.604	1.493	1.724	0.133	0.289	0.000	0.000
Schooling Superior	-0.396	-0.541	-0.251	0.673	0.582	0.778	0.230	0.169	0.000	0.000
Respiratory Discomfort	0.366	0.295	0.438	1.442	1.343	1.549	0.160	0.267	0.000	0.000
Other Symptoms	-0.299	-0.369	-0.229	0.742	0.691	0.795	0.239	0.197	0.000	0.000
Race White	-0.293	-0.369	-0.217	0.746	0.692	0.805	0.235	0.207	0.000	0.000
Fever	-0.278	-0.351	-0.205	0.757	0.704	0.814	0.262	0.215	0.000	0.000
Xray Torax Result Consolidation	0.228	0.067	0.388	1.256	1.069	1.475	0.223	0.318	0.000	0.005
Gender F	-0.227	-0.290	-0.165	0.797	0.748	0.848	0.235	0.214	0.002	0.000
Diarrhea	-0.220	-0.319	-0.121	0.802	0.727	0.886	0.234	0.177	0.000	0.000
Vomiting	-0.203	-0.332	-0.074	0.816	0.718	0.929	0.230	0.177	0.000	0.002
Dyspnea	0.201	0.122	0.279	1.222	1.129	1.322	0.146	0.254	0.000	0.000
Throat	-0.193	-0.275	-0.111	0.825	0.760	0.895	0.240	0.176	0.000	0.000
Diabetes	0.186	0.115	0.257	1.204	1.122	1.293	0.201	0.300	0.000	0.000
Race Brown	0.170	0.094	0.246	1.185	1.098	1.278	0.220	0.242	0.003	0.000
Schooling Medium 1-3	-0.149	-0.257	-0.041	0.862	0.773	0.960	0.231	0.185	0.000	0.007
Antiviral Use	0.139	0.075	0.203	1.149	1.078	1.225	0.202	0.265	0.000	0.000
Renal Chronic Disease	0.112	-0.024	0.247	1.118	0.977	1.281	0.221	0.339	0.000	0.105
Other Risks	0.068	-0.001	0.136	1.070	0.999	1.146	0.205	0.285	0.000	0.054
Contracted At Hospital	0.051	-0.126	0.228	1.052	0.882	1.256	0.223	0.322	0.000	0.572
Immunosuppression	0.049	-0.117	0.215	1.050	0.889	1.240	0.224	0.278	0.004	0.566
Another Chronic Pneumopathy	0.039	-0.102	0.180	1.040	0.903	1.197	0.222	0.327	0.000	0.586
Cardiovascular Disease	-0.022	-0.090	0.047	0.979	0.914	1.048	0.196	0.285	0.000	0.535

Recursive Feature Elimination:

Number of features selected

Coefficients:

	SVM-l1	LR-l1
ICU	1.000	1.000
SpO2 less 95\%	0.171	0.210
Respiratory Discomfort	0.155	0.168
Dyspnea	0.132	0.149
Race Brown	0.088	0.110
Xray Torax Result Consolidation	0.092	0.087
Diabetes	0.077	0.083
Renal Chronic Disease	0.067	0.060
Antiviral Use	0.059	0.059
Age 70-100	0.047	0.056
Other Risks	0.050	0.051
Contracted At Hospital	0.060	0.049
Immunosuppression	0.029	0.032
Age 50-70	0.031	0.031
Another Chronic Pneumopathy	0.021	0.014
Cardiovascular Disease	0.014	0.014
Gender F	-0.036	-0.039
Fever	-0.042	-0.042
Schooling Medium 1-3	-0.032	-0.049
Vomiting	-0.056	-0.064
Other Symptoms	-0.064	-0.069
Race White	-0.067	-0.075
Throat	-0.067	-0.075
Diarrhea	-0.069	-0.079
Age 0-30	-0.095	-0.124
Cough	-0.130	-0.136
Schooling Superior	-0.138	-0.137
Age 30-50	-0.113	-0.141

Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.792	0.793	0.740	0.793
F1w	0.788	0.787	0.633	0.787
AUC	0.829	0.830	0.825	0.830

39
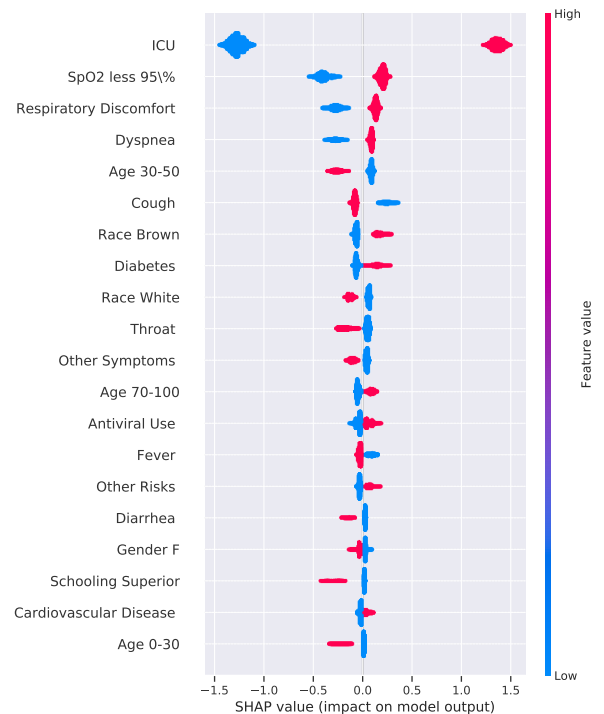
2.10 Ventilator with ICU small

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
BMI 30-35	-2.927	-3.023	-2.831	0.054	0.049	0.059	0.326	0.224	0.000	0.000
ICU	2.565	2.500	2.630	12.999	12.179	13.874	0.068	0.526	0.000	0.000
Cough	-0.635	-0.705	-0.564	0.530	0.494	0.569	0.280	0.211	0.000	0.000
Schooling Superior	-0.571	-0.712	-0.431	0.565	0.491	0.650	0.230	0.169	0.000	0.000
SpO2 less 95\%	0.492	0.421	0.563	1.635	1.523	1.755	0.134	0.288	0.000	0.000
Respiratory Discomfort	0.295	0.225	0.365	1.343	1.252	1.440	0.162	0.266	0.000	0.000
Race Brown	0.291	0.222	0.359	1.338	1.249	1.433	0.220	0.243	0.002	0.000
Age 70-100	0.268	0.202	0.334	1.307	1.224	1.396	0.195	0.293	0.000	0.000
Xray Torax Result Consolidation	0.251	0.090	0.412	1.285	1.095	1.509	0.222	0.333	0.000	0.002
Dyspnea	0.193	0.115	0.270	1.213	1.122	1.310	0.146	0.255	0.000	0.000
Other Risks	0.094	0.027	0.161	1.098	1.027	1.175	0.206	0.283	0.000	0.006
Antiviral Use	0.066	0.003	0.128	1.068	1.003	1.137	0.201	0.266	0.000	0.040
Cardiovascular Disease	0.052	-0.013	0.116	1.053	0.987	1.123	0.197	0.284	0.000	0.117

Recursive Feature Elimination:

Number of features selected
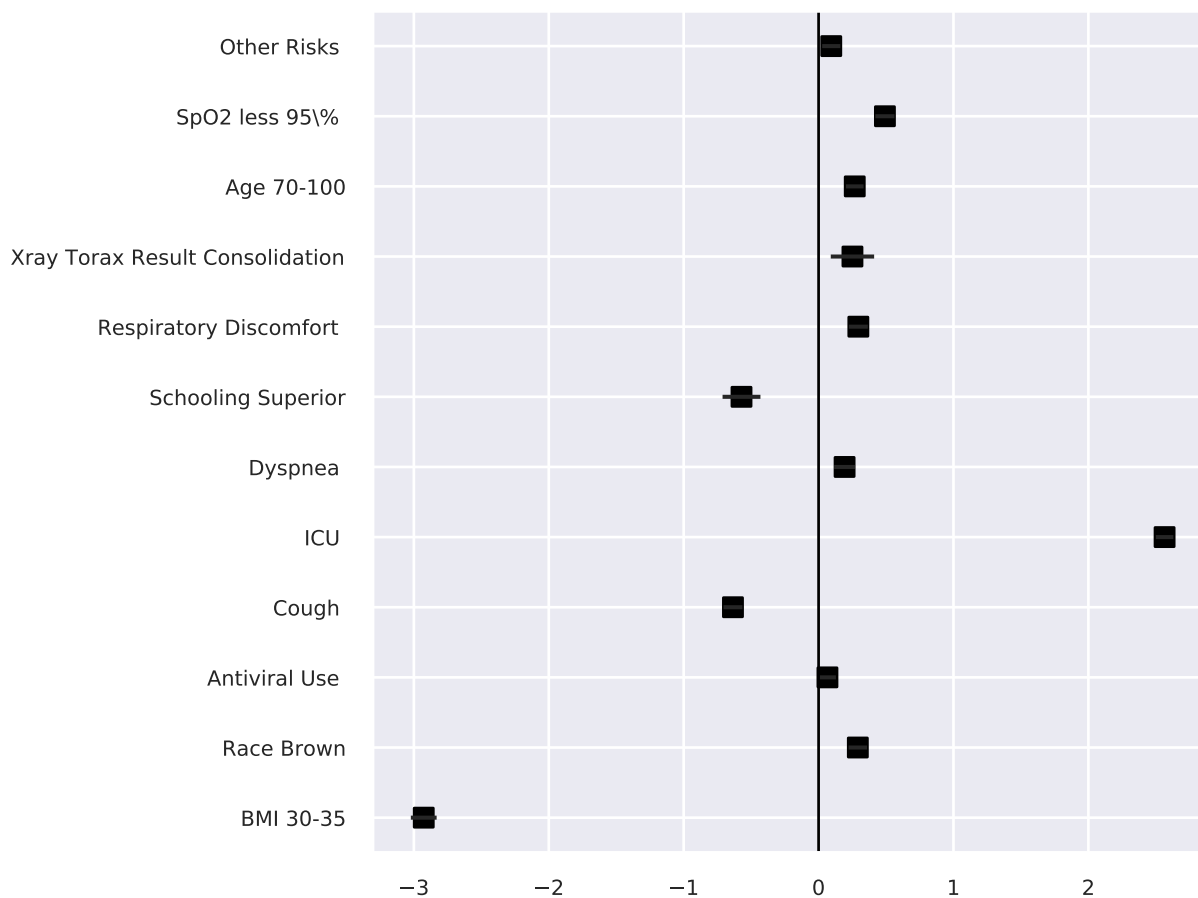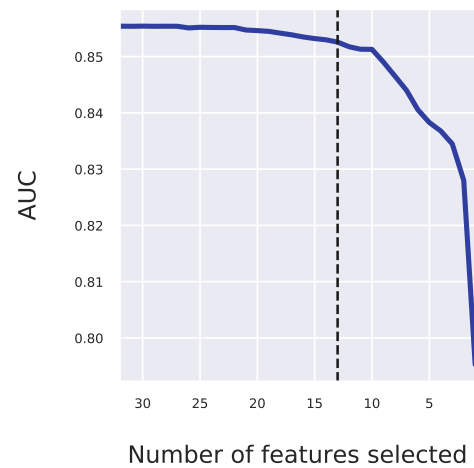
Performance:

	SVM-l1	LR-l1	RF	XGBoost
Accuracy	0.781	0.782	0.756	0.783
F1w	0.778	0.777	0.696	0.778
AUC	0.820	0.820	0.818	0.822
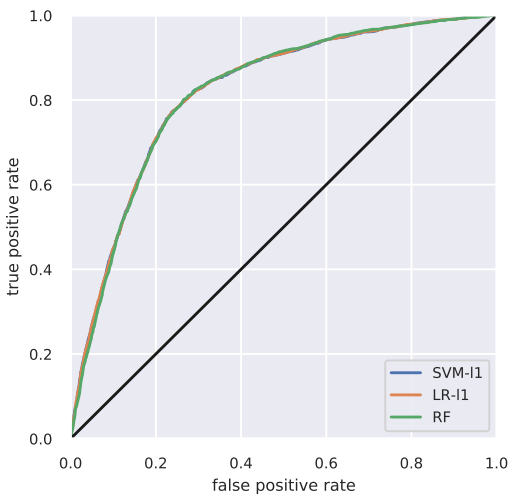
Coefficients:

	SVM-l1	LR-l1
ICU	1.000	1.000
SpO2 less 95\%	0.177	0.222
Dyspnea	0.130	0.150
Respiratory Discomfort	0.130	0.144
Race Brown	0.110	0.138
Age 70-100	0.090	0.110
Xray Torax Result Consolidation	0.111	0.105
Other Risks	0.063	0.068
Cardiovascular Disease	0.049	0.054
Antiviral Use	0.044	0.044
BMI 30-35	-0.083	-0.074
Cough	-0.141	-0.150
Schooling Superior	-0.173	-0.172