PRELIMINARY RESULTS FOR BRAZIL COVID-19 DATASET

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1 Basic Analytics

	0
N	92662
N_Hosp	84195
N_Death	31788
Female	39658
Male	52979
Race	26525
Schooling	7058
Acute Respiratory Distress Syndrome	22854
Contracted At Hospital	2374
Contact Birds Pigs	744
Fever	67553
Cough	70434
Throat	19587
Dyspnea	64220
Respiratory Discomfort	53370
SpO2 less 95\%	51025
Diarrhea	12502
Vomiting	7010
Other Symptoms	29366
Postpartum	403
Cardiovascular Disease	28978
Hematologic Disease	852
Down Syndrome	238
Liver Chronic Disease	773
Asthma	2544
Diabetes	21990
Neurological Disease	3457
Another Chronic Pneumopathy	3326
Immunosuppression	2745
Renal Chronic Disease	3717
Obesity	3313
Other Risks	22495
Antiviral Use	29747
Hospitalization	84195
ICU	27840
Ventilator	16963
Xray Torax Result	2409
Result Final	0
Evolution	35639
Public Hospital	30867

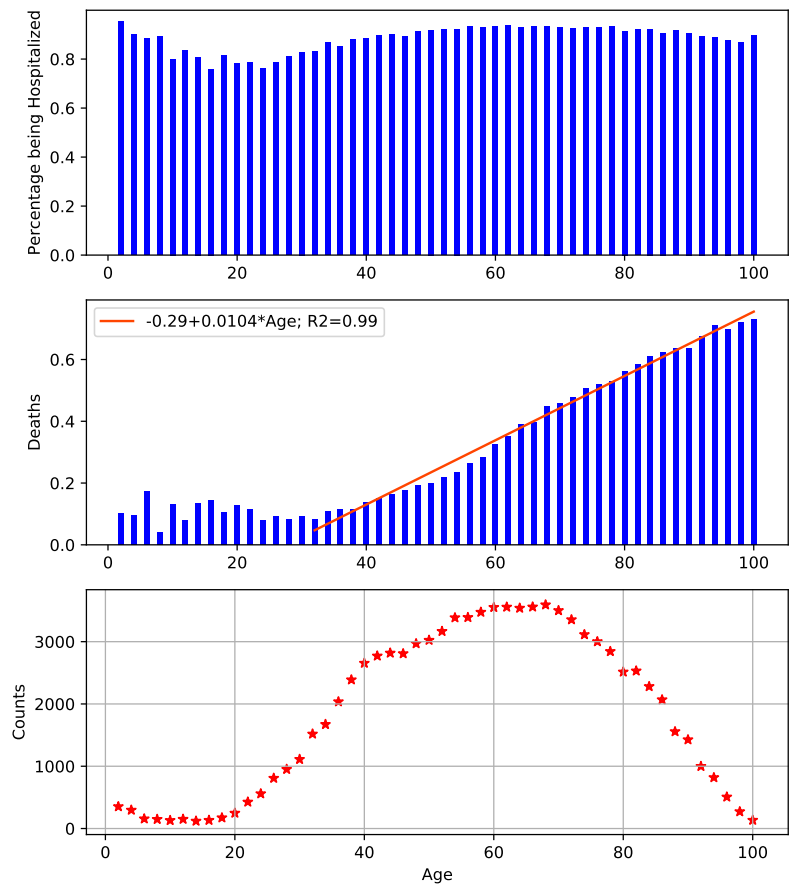**Table 1:** Number of observations with a specific observation

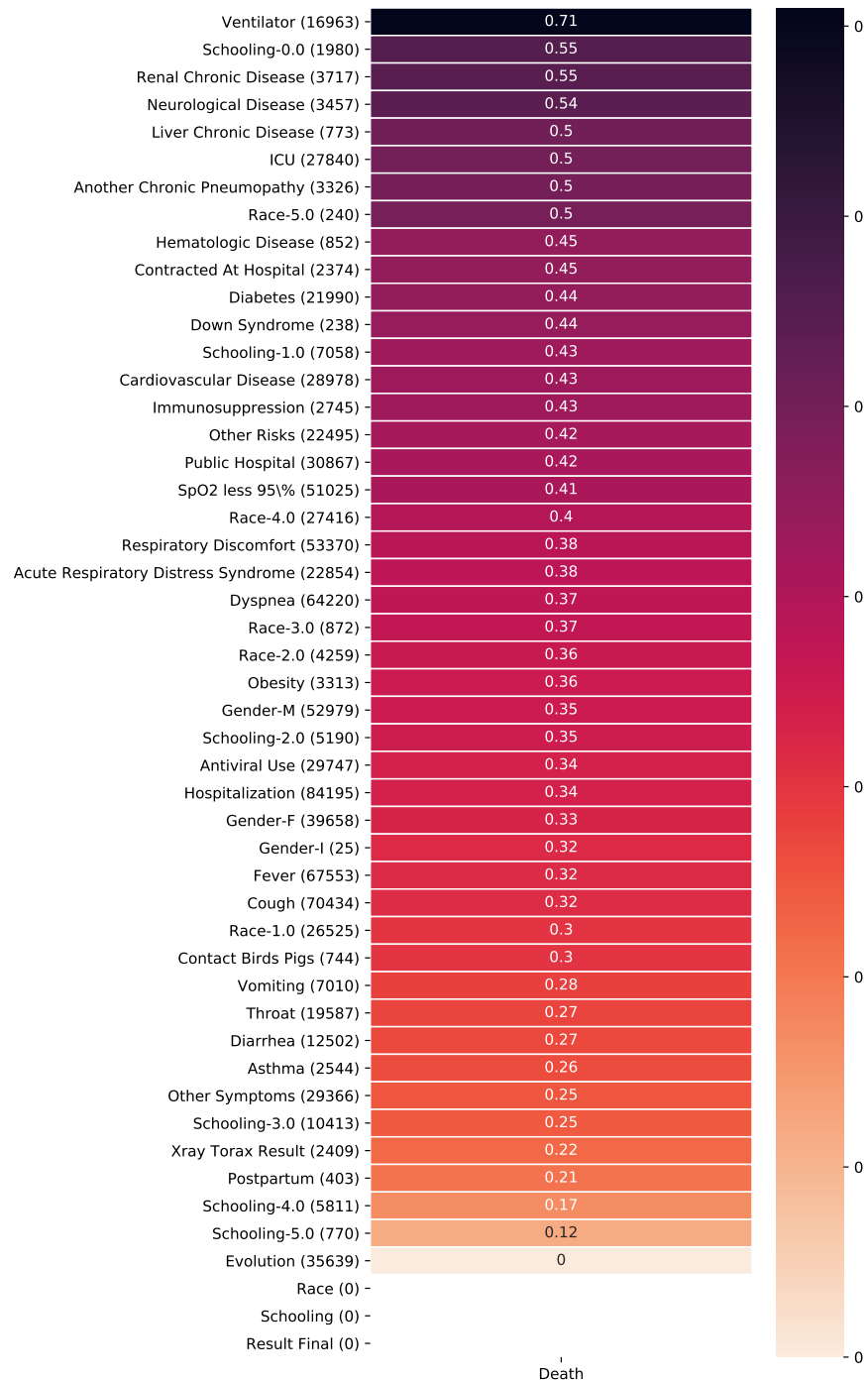**Figure 1:** Distribution of hospitalization and deaths by age group

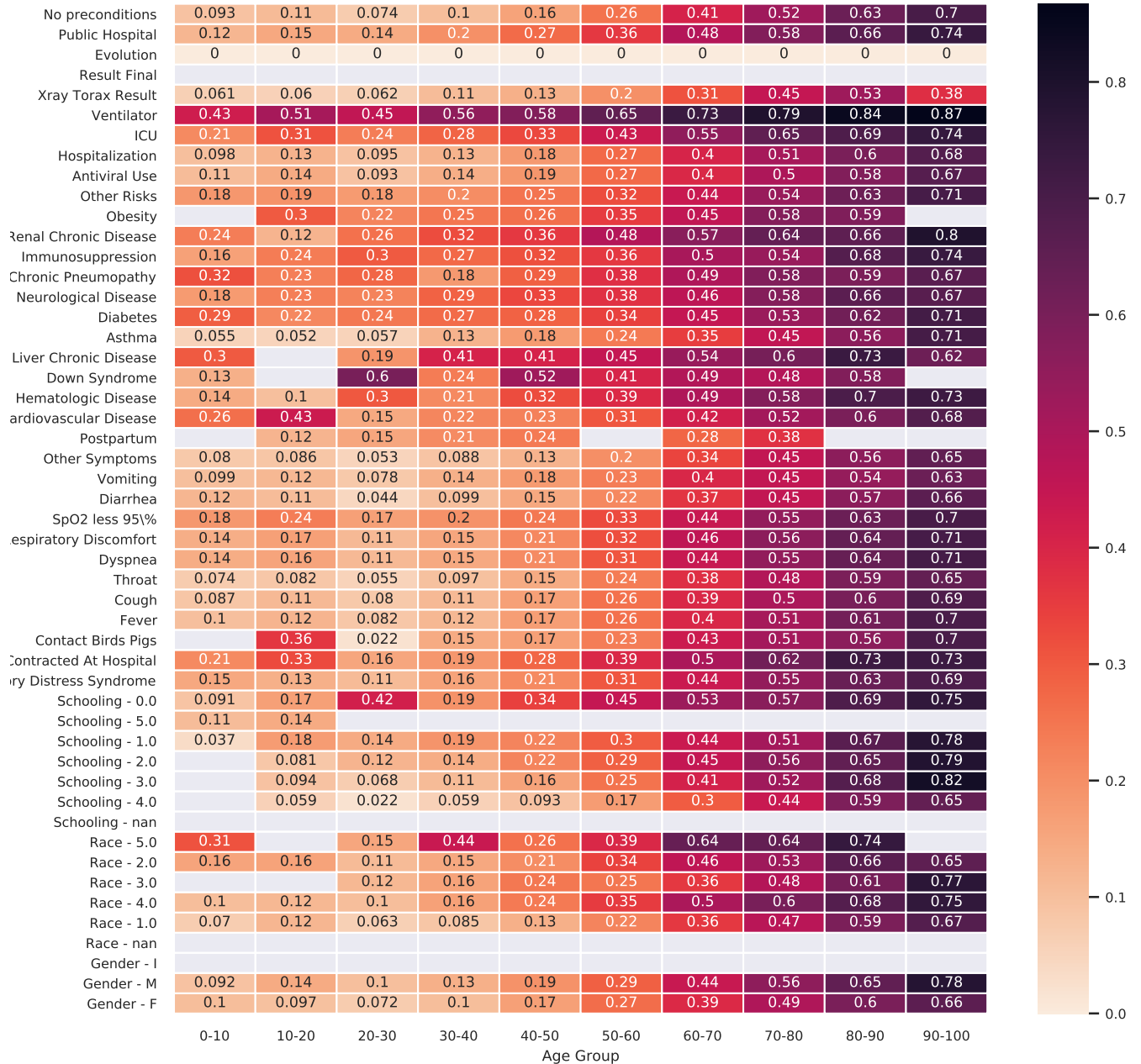**Figure 2:** Share of hospitalized and deaths patients given characteristics

Characteristic	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No preconditions	0.093	0.11	0.074	0.1	0.16	0.26	0.41	0.52	0.63	0.7
Public Hospital	0.12	0.15	0.14	0.2	0.27	0.36	0.48	0.58	0.66	0.74
Evolution	0	0	0	0	0	0	0	0	0	0
Result Final										
Xray Torax Result	0.061	0.06	0.062	0.11	0.13	0.2	0.31	0.45	0.53	0.38
Ventilator	0.43	0.51	0.45	0.56	0.58	0.65	0.73	0.79	0.84	0.87
ICU	0.21	0.31	0.24	0.28	0.33	0.43	0.55	0.65	0.69	0.74
Hospitalization	0.098	0.13	0.095	0.13	0.18	0.27	0.4	0.51	0.6	0.68
Antiviral Use	0.11	0.14	0.093	0.14	0.19	0.27	0.4	0.5	0.58	0.67
Other Risks	0.18	0.19	0.18	0.2	0.25	0.32	0.44	0.54	0.63	0.71
Obesity		0.3	0.22	0.25	0.26	0.35	0.45	0.58	0.59	
Renal Chronic Disease	0.24	0.12	0.26	0.32	0.36	0.48	0.57	0.64	0.66	0.8
Immunosuppression	0.16	0.24	0.3	0.27	0.32	0.36	0.5	0.54	0.68	0.74
Chronic Pneumopathy	0.32	0.23	0.28	0.18	0.29	0.38	0.49	0.58	0.59	0.67
Neurological Disease	0.18	0.23	0.23	0.29	0.33	0.38	0.46	0.58	0.66	0.67
Diabetes	0.29	0.22	0.24	0.27	0.28	0.34	0.45	0.53	0.62	0.71
Asthma	0.055	0.052	0.057	0.13	0.18	0.24	0.35	0.45	0.56	0.71
Liver Chronic Disease	0.3		0.19	0.41	0.41	0.45	0.54	0.6	0.73	0.62
Down Syndrome	0.13		0.6	0.24	0.52	0.41	0.49	0.48	0.58	
Hematologic Disease	0.14	0.1	0.3	0.21	0.32	0.39	0.49	0.58	0.7	0.73
Cardiovascular Disease	0.26	0.43	0.15	0.22	0.23	0.31	0.42	0.52	0.6	0.68
Postpartum		0.12	0.15	0.21	0.24		0.28	0.38		
Other Symptoms	0.08	0.086	0.053	0.088	0.13	0.2	0.34	0.45	0.56	0.65
Vomiting	0.099	0.12	0.078	0.14	0.18	0.23	0.4	0.45	0.54	0.63
Diarrhea	0.12	0.11	0.044	0.099	0.15	0.22	0.37	0.45	0.57	0.66
SpO2 less 95\%	0.18	0.24	0.17	0.2	0.24	0.33	0.44	0.55	0.63	0.7
Respiratory Discomfort	0.14	0.17	0.11	0.15	0.21	0.32	0.46	0.56	0.64	0.71
Dyspnea	0.14	0.16	0.11	0.15	0.21	0.31	0.44	0.55	0.64	0.71
Throat	0.074	0.082	0.055	0.097	0.15	0.24	0.38	0.48	0.59	0.65
Cough	0.087	0.11	0.08	0.11	0.17	0.26	0.39	0.5	0.6	0.69
Fever	0.1	0.12	0.082	0.12	0.17	0.26	0.4	0.51	0.61	0.7
Contact Birds Pigs		0.36	0.022	0.15	0.17	0.23	0.43	0.51	0.56	0.7
Contracted At Hospital	0.21	0.33	0.16	0.19	0.28	0.39	0.5	0.62	0.73	0.73
Respiratory Distress Syndrome	0.15	0.13	0.11	0.16	0.21	0.31	0.44	0.55	0.63	0.69
Schooling - 0.0	0.091	0.17	0.42	0.19	0.34	0.45	0.53	0.57	0.69	0.75
Schooling - 5.0	0.11	0.14								
Schooling - 1.0	0.037	0.18	0.14	0.19	0.22	0.3	0.44	0.51	0.67	0.78
Schooling - 2.0		0.081	0.12	0.14	0.22	0.29	0.45	0.56	0.65	0.79
Schooling - 3.0		0.094	0.068	0.11	0.16	0.25	0.41	0.52	0.68	0.82
Schooling - 4.0		0.059	0.022	0.059	0.093	0.17	0.3	0.44	0.59	0.65
Schooling - nan										
Race - 5.0	0.31		0.15	0.44	0.26	0.39	0.64	0.64	0.74	
Race - 2.0	0.16	0.16	0.11	0.15	0.21	0.34	0.46	0.53	0.66	0.65
Race - 3.0			0.12	0.16	0.24	0.25	0.36	0.48	0.61	0.77
Race - 4.0	0.1	0.12	0.1	0.16	0.24	0.35	0.5	0.6	0.68	0.75
Race - 1.0	0.07	0.12	0.063	0.085	0.13	0.22	0.36	0.47	0.59	0.67
Race - nan										
Gender - I										
Gender - M	0.092	0.14	0.1	0.13	0.19	0.29	0.44	0.56	0.65	0.78
Gender - F	0.1	0.097	0.072	0.1	0.17	0.27	0.39	0.49	0.6	0.66

Age Group

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

2 Results

2.1 Mortality (previous)

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	0.159	0.109	0.210	1.173	1.116	1.233	0.445	0.508	0.000	0.000
1.061	1.167	0.057								
Age 0-30	-1.398	-1.546	-1.251	0.247	0.213	0.286	0.481	0.149	0.000	0.000
0.577	0.211	0.034								
Age 30-50	-0.881	-0.980	-0.782	0.414	0.375	0.457	0.548	0.224	0.000	0.000
0.674	0.353	0.039								
Age 50-65	-0.198	-0.291	-0.105	0.820	0.747	0.900	0.480	0.417	0.000	0.000
0.879	0.707	0.073								
Age 65-100	0.845	0.747	0.943	2.327	2.110	2.567	0.306	0.680	0.000	0.000
1.386	1.995	0.217								
Another Chronic Pneumopathy	0.210	0.097	0.323	1.234	1.102	1.381	0.454	0.634	0.000	0.000
1.085	1.227	0.132								
Asthma	-0.245	-0.384	-0.106	0.783	0.681	0.900	0.464	0.363	0.000	0.001
0.907	0.782	0.102								
BMI 25-30	-0.310	-0.407	-0.213	0.733	0.666	0.808	0.503	0.460	0.033	0.000
0.820	0.595	0.067								
Cardiovascular Disease	0.061	0.012	0.111	1.063	1.012	1.117	0.409	0.563	0.000	0.015
1.020	1.053	0.051								
Contracted At Hospital	0.450	0.304	0.595	1.568	1.356	1.813	0.457	0.628	0.000	0.000
1.184	1.551	0.212								
Cough	-0.570	-0.626	-0.513	0.566	0.535	0.598	0.577	0.428	0.000	0.000
0.798	0.556	0.031								
Diabetes	0.241	0.189	0.293	1.273	1.208	1.341	0.422	0.576	0.000	0.000
1.098	1.265	0.065								
Diarrhea	-0.216	-0.285	-0.148	0.806	0.752	0.863	0.474	0.379	0.000	0.000
0.918	0.804	0.054								
Dyspnea	0.316	0.262	0.370	1.372	1.299	1.448	0.371	0.494	0.000	0.000
1.121	1.350	0.073								
Fever	-0.269	-0.322	-0.216	0.764	0.724	0.806	0.556	0.429	0.000	0.000
0.895	0.751	0.040								
Gender_F	-0.199	-0.244	-0.154	0.819	0.783	0.857	0.470	0.449	0.000	0.000
0.924	0.810	0.036								
Hematologic Disease	0.239	0.013	0.464	1.269	1.013	1.590	0.460	0.588	0.000	0.038
1.089	1.255	0.256								
Immunosuppression	0.495	0.369	0.622	1.641	1.446	1.863	0.457	0.581	0.000	0.000
1.207	1.632	0.195								
Liver Chronic Disease	0.483	0.247	0.718	1.620	1.280	2.050	0.460	0.620	0.000	0.000
1.202	1.589	0.340								
Neurological Disease	0.435	0.321	0.549	1.545	1.378	1.731	0.452	0.686	0.000	0.000
1.182	1.536	0.167								
Other Risks	0.254	0.204	0.305	1.290	1.226	1.357	0.434	0.539	0.000	0.000
1.100	1.281	0.064								
Other Symptoms	-0.484	-0.534	-0.435	0.616	0.586	0.647	0.509	0.354	0.000	0.000
0.827	0.609	0.030								
Postpartum	0.276	-0.073	0.624	1.317	0.930	1.867	0.462	0.286	0.000	0.121
1.089	1.265	0.387								
Public Hospital	0.574	0.528	0.620	1.775	1.696	1.859	0.404	0.557	0.000	0.000
1.246	1.761	0.079								
Race Indigenous	0.672	0.225	1.120	1.959	1.253	3.063	0.461	0.673	0.000	0.003
1.278	1.847	0.706								
Race White	-0.415	-0.465	-0.365	0.660	0.628	0.694	0.490	0.395	0.000	0.000
0.850	0.655	0.032								
Renal Chronic Disease	0.667	0.555	0.780	1.949	1.741	2.182	0.450	0.699	0.000	0.000
1.295	1.935	0.208								
Respiratory Discomfort	0.319	0.269	0.369	1.376	1.309	1.446	0.389	0.508	0.000	0.000
1.130	1.367	0.067								
Schooling Elem 1-5	0.080	-0.002	0.161	1.083	0.998	1.175	0.453	0.564	0.000	0.056
1.032	1.079	0.085								
Schooling Medium 1-3	-0.120	-0.195	-0.044	0.887	0.823	0.957	0.476	0.339	0.000	0.002
0.954	0.882	0.064								
Schooling Superior	-0.379	-0.486	-0.272	0.685	0.615	0.762	0.474	0.256	0.000	0.000
0.876	0.681	0.070								
SpO2 less 95\%	0.517	0.468	0.566	1.677	1.596	1.761	0.342	0.543	0.000	0.000
1.217	1.663	0.081								
Throat	-0.306	-0.363	-0.249	0.737	0.696	0.780	0.482	0.381	0.000	0.000
0.891	0.738	0.041								
Vomiting	-0.060	-0.148	0.028	0.942	0.863	1.028	0.467	0.389	0.000	0.179
0.976	0.943	0.079								

Recursive Feature Elimination:

Number of features selected
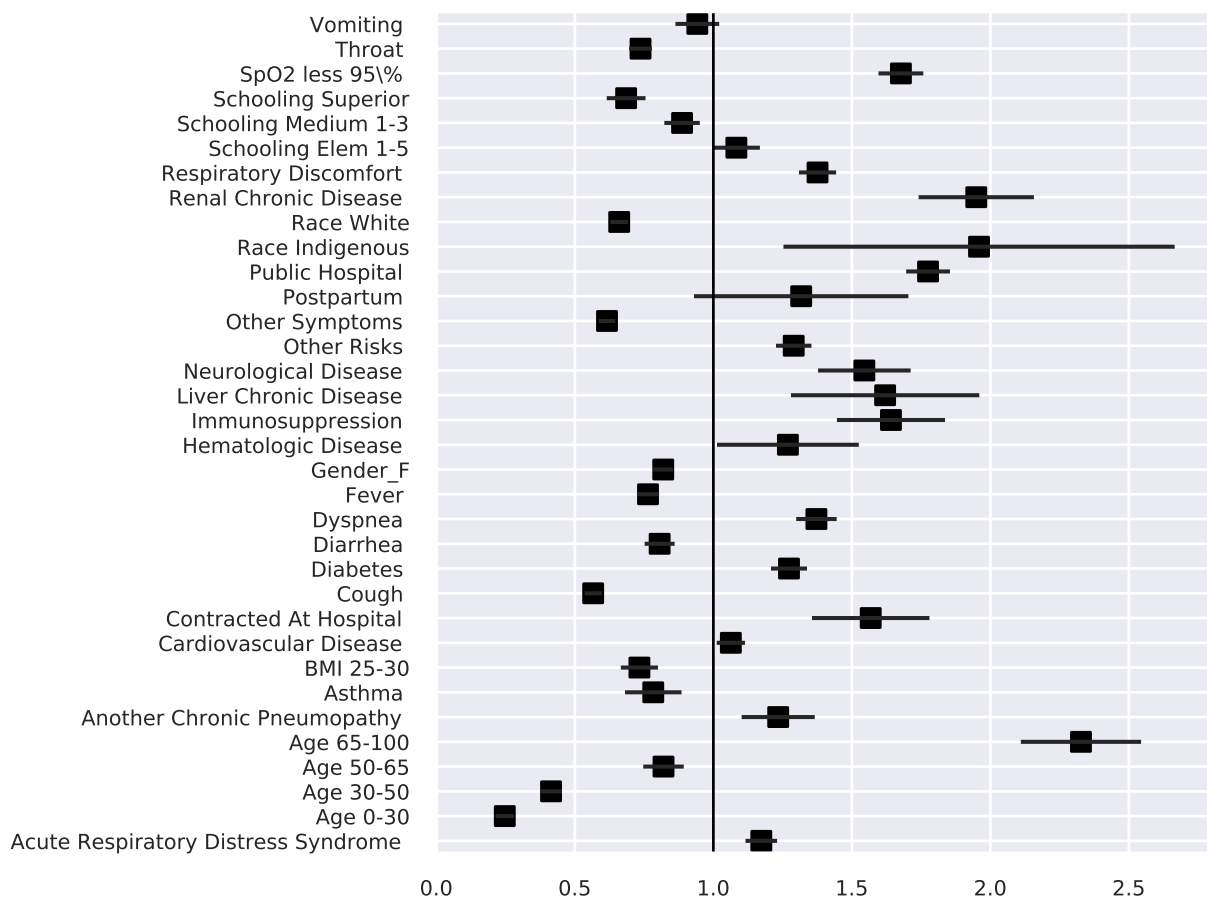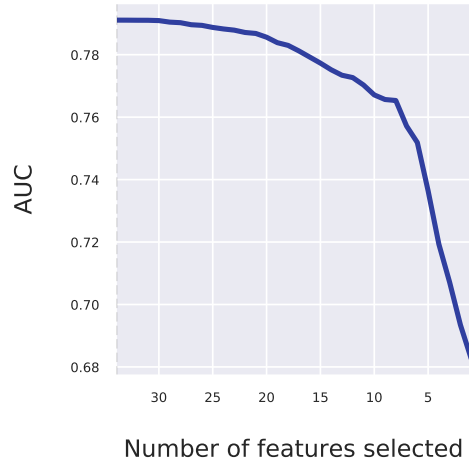
Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.678	0.678	0.678	0.659	0.681
F1w	0.678	0.678	0.678	0.658	0.681
AUC	0.743	0.744	0.744	0.727	0.746
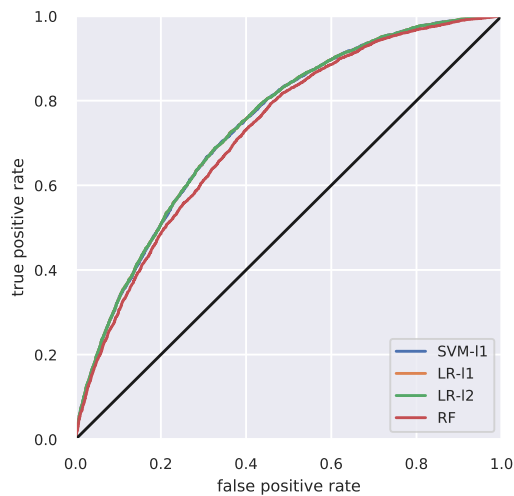
Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.577	0.211
Age 30-50	0.674	0.353
Cough	0.798	0.556
BMI 25-30	0.820	0.595
Other Symptoms	0.827	0.609
Race White	0.850	0.655
Schooling Superior	0.876	0.681
Age 50-65	0.879	0.707
Throat	0.891	0.738
Fever	0.895	0.751
Asthma	0.907	0.782
Diarrhea	0.918	0.804
Gender_F	0.924	0.810
Schooling Medium 1-3	0.954	0.882
Vomiting	0.976	0.943
Cardiovascular Disease	1.020	1.053
Schooling Elem 1-5	1.032	1.079
Acute Respiratory Distress Syndrome	1.061	1.167
Another Chronic Pneumopathy	1.085	1.227
Hematologic Disease	1.089	1.255
Postpartum	1.089	1.265
Diabetes	1.098	1.265
Other Risks	1.100	1.281
Dyspnea	1.121	1.350
Respiratory Discomfort	1.130	1.367
Neurological Disease	1.182	1.536
Contracted At Hospital	1.184	1.551
Liver Chronic Disease	1.202	1.589
Immunosuppression	1.207	1.632
SpO2 less 95\%	1.217	1.663
Public Hospital	1.246	1.761
Race Indigenous	1.278	1.847
Renal Chronic Disease	1.295	1.935
Age 65-100	1.386	1.995
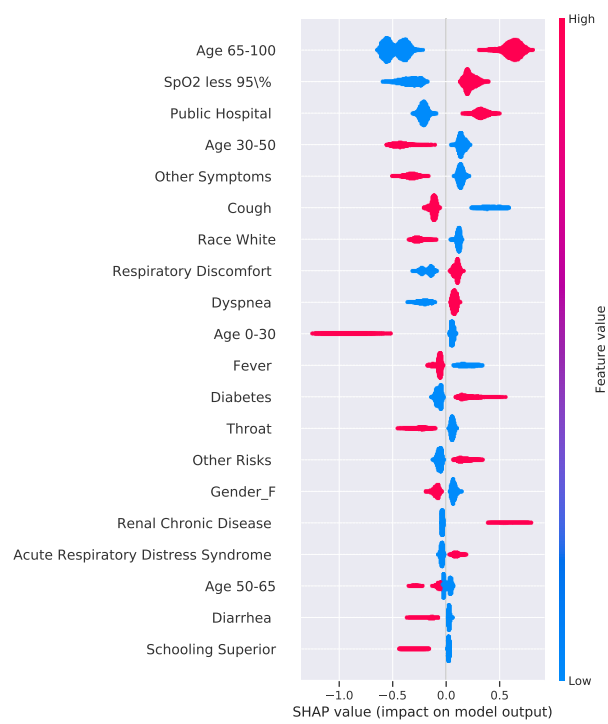
2.2 Mortality (previous) small

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
SVM-l1	LR-l1	err								
Acute Respiratory Distress Syndrome	0.209	0.164	0.254	1.233	1.179	1.289	0.446	0.511	0.000	0.000
1.106	1.244	0.054								
Age 0-30	-1.624	-1.738	-1.511	0.197	0.176	0.221	0.482	0.154	0.000	0.000
0.543	0.200	0.021								
Diarrhea	-0.416	-0.475	-0.356	0.660	0.622	0.700	0.477	0.374	0.000	0.000
0.832	0.664	0.038								
Fever	-0.582	-0.618	-0.546	0.559	0.539	0.579	0.558	0.430	0.000	0.000
0.777	0.578	0.020								
Immunosuppression	0.352	0.236	0.468	1.421	1.266	1.596	0.459	0.576	0.000	0.000
1.170	1.425	0.155								
Liver Chronic Disease	0.524	0.304	0.744	1.689	1.355	2.105	0.461	0.636	0.000	0.000
1.255	1.679	0.334								
Neurological Disease	1.052	0.945	1.160	2.864	2.573	3.188	0.452	0.704	0.000	0.000
1.589	2.872	0.291								
Other Risks	0.355	0.311	0.400	1.427	1.365	1.491	0.437	0.538	0.000	0.000
1.183	1.444	0.062								
Postpartum	-0.384	-0.732	-0.037	0.681	0.481	0.964	0.464	0.289	0.000	0.030
0.863	0.713	0.200								
Race Indigenous	0.711	0.252	1.170	2.036	1.287	3.222	0.462	0.663	0.001	0.002
1.356	1.941	0.749								
Race White	-0.458	-0.501	-0.415	0.633	0.606	0.660	0.492	0.395	0.000	0.000
0.817	0.641	0.027								
Renal Chronic Disease	0.964	0.860	1.068	2.623	2.364	2.909	0.451	0.706	0.000	0.000
1.535	2.640	0.259								
Respiratory Discomfort	0.509	0.471	0.547	1.664	1.602	1.728	0.393	0.508	0.000	0.000
1.272	1.694	0.062								
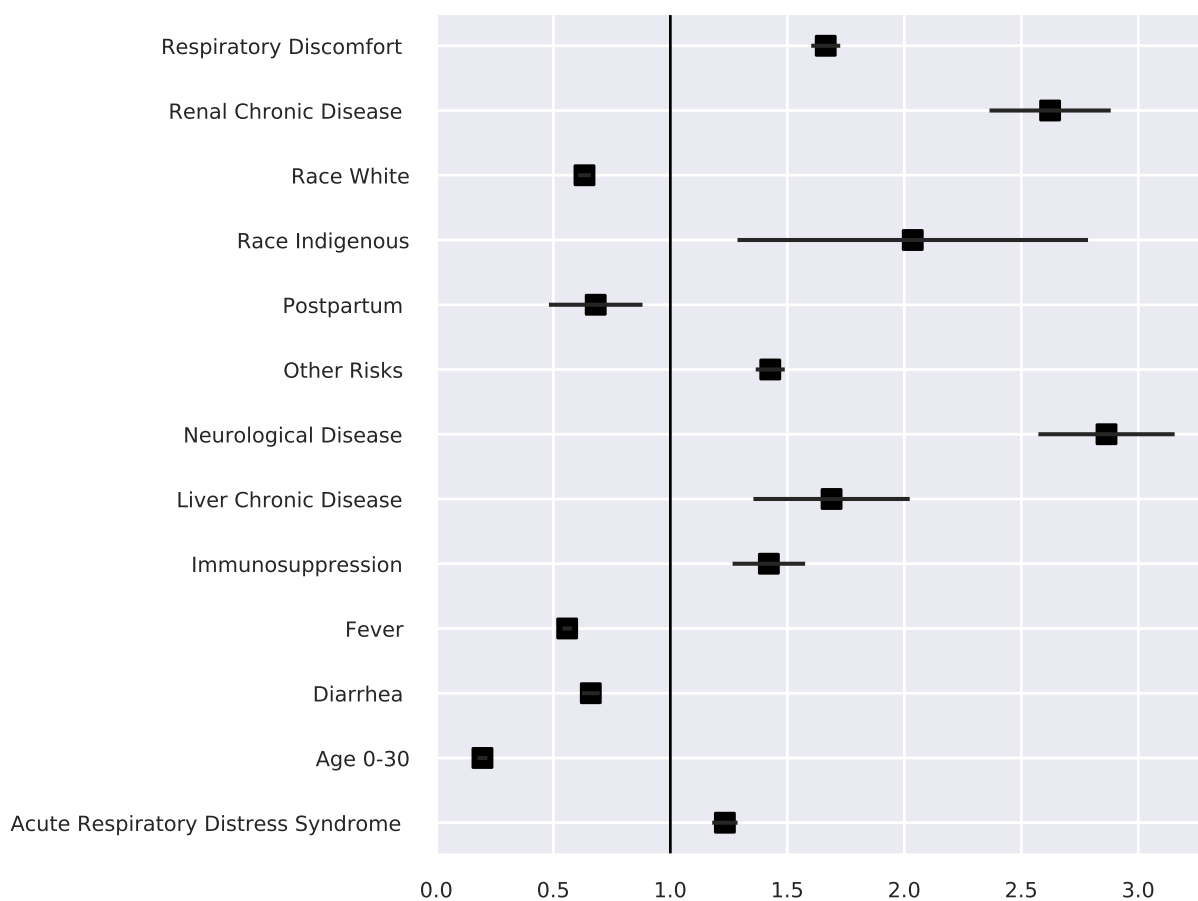
Recursive Feature Elimination:
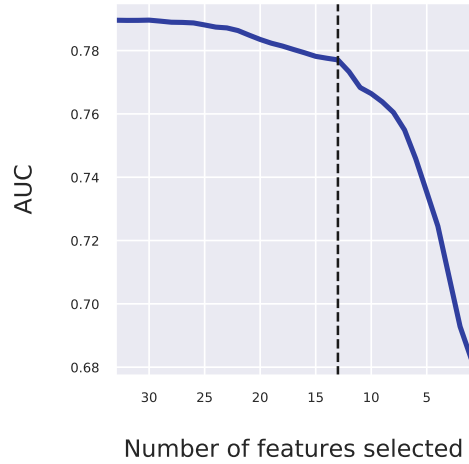
Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.543	0.200
Fever	0.777	0.578
Race White	0.817	0.641
Diarrhea	0.832	0.664
Postpartum	0.863	0.713
Acute Respiratory Distress Syndrome	1.106	1.244
Immunosuppression	1.170	1.425
Other Risks	1.183	1.444
Liver Chronic Disease	1.255	1.679
Respiratory Discomfort	1.272	1.694
Race Indigenous	1.356	1.941
Renal Chronic Disease	1.535	2.640
Neurological Disease	1.589	2.872

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.610	0.610	0.610	0.604	0.61
F1w	0.607	0.607	0.607	0.592	0.60
AUC	0.656	0.656	0.656	0.652	0.65
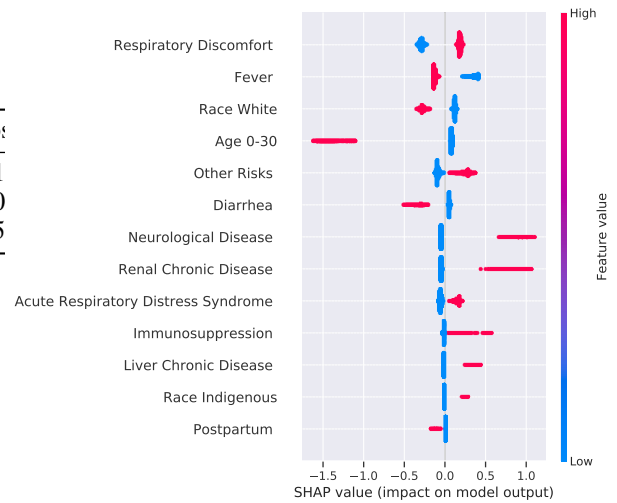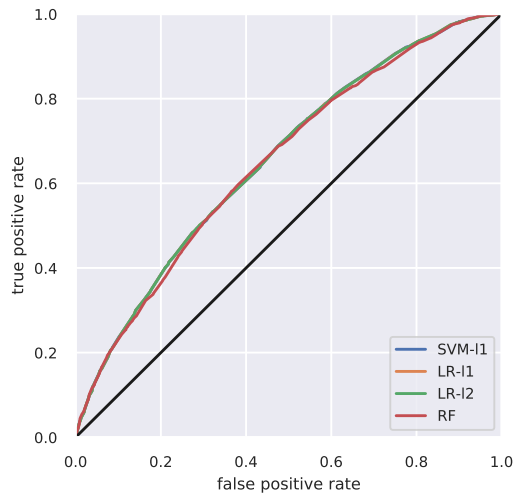
2.3   Mortality (advanced)

Include variables: Antiviral, ICU, Ventilator

SVM-l1	Coef / LR-l1	2.5 / err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	0.071	0.016	0.126	1.074	1.016	1.135	0.445	0.511	0.000	0.011
1.029	1.082	0.058								
Age 0-30	-1.954	-2.101	-1.806	0.142	0.122	0.164	0.481	0.149	0.000	0.000
0.603	0.199	0.020								
Age 30-50	-1.308	-1.392	-1.224	0.270	0.249	0.294	0.547	0.227	0.000	0.000
0.718	0.374	0.021								
Age 50-65	-0.634	-0.709	-0.558	0.531	0.492	0.572	0.481	0.416	0.000	0.000
0.887	0.723	0.039								
Age 65-100	0.464	0.388	0.540	1.591	1.474	1.716	0.306	0.678	0.000	0.000
1.387	2.211	0.117								
Another Chronic Pneumopathy	0.168	0.044	0.292	1.183	1.046	1.339	0.454	0.641	0.000	0.008
1.068	1.182	0.137								
Antiviral Use	-0.436	-0.488	-0.384	0.646	0.614	0.681	0.474	0.441	0.000	0.000
0.857	0.649	0.032								
Asthma	-0.271	-0.425	-0.118	0.762	0.654	0.889	0.465	0.362	0.000	0.001
0.915	0.766	0.108								
Cardiovascular Disease	0.026	-0.029	0.080	1.026	0.972	1.083	0.409	0.567	0.000	0.356
1.008	1.034	0.054								
Contact Birds Pigs	-0.159	-0.427	0.109	0.853	0.652	1.115	0.462	0.380	0.014	0.245
0.953	0.870	0.201								
Contracted At Hospital	0.418	0.260	0.577	1.519	1.296	1.781	0.457	0.640	0.000	0.000
1.169	1.531	0.223								
Cough	-0.476	-0.537	-0.415	0.621	0.585	0.660	0.574	0.429	0.000	0.000
0.849	0.644	0.036								
Diabetes	0.181	0.124	0.238	1.199	1.132	1.269	0.421	0.579	0.000	0.000
1.071	1.203	0.067								
Diarrhea	-0.177	-0.251	-0.103	0.838	0.778	0.903	0.474	0.383	0.000	0.000
0.941	0.841	0.060								
Dyspnea	0.127	0.068	0.185	1.135	1.071	1.204	0.376	0.493	0.000	0.000
1.057	1.164	0.064								
Fever	-0.321	-0.379	-0.264	0.725	0.685	0.768	0.555	0.430	0.000	0.000
0.898	0.748	0.040								
Gender_F	-0.176	-0.225	-0.127	0.839	0.799	0.881	0.471	0.449	0.000	0.000
0.947	0.858	0.040								
Hematologic Disease	0.154	-0.083	0.392	1.167	0.920	1.481	0.461	0.575	0.000	0.203
1.050	1.159	0.247								
ICU	0.501	0.443	0.560	1.651	1.557	1.751	0.358	0.660	0.000	0.000
1.207	1.676	0.094								
Immunosuppression	0.277	0.139	0.414	1.319	1.149	1.513	0.459	0.553	0.000	0.000
1.102	1.324	0.170								
Liver Chronic Disease	0.455	0.198	0.713	1.577	1.219	2.039	0.460	0.633	0.000	0.001
1.183	1.569	0.358								
Neurological Disease	0.533	0.412	0.654	1.704	1.510	1.924	0.452	0.694	0.000	0.000
1.238	1.713	0.194								
Other Risks	0.130	0.075	0.186	1.139	1.078	1.204	0.435	0.538	0.000	0.000
1.050	1.151	0.061								
Other Symptoms	-0.546	-0.600	-0.491	0.580	0.549	0.612	0.507	0.359	0.000	0.000
0.833	0.592	0.031								
Postpartum	-0.146	-0.551	0.260	0.865	0.576	1.297	0.463	0.276	0.000	0.482
0.961	0.915	0.289								
Public Hospital	0.661	0.610	0.711	1.937	1.841	2.037	0.403	0.560	0.000	0.000
1.282	1.971	0.096								
Race Indigenous	0.924	0.409	1.439	2.520	1.506	4.217	0.461	0.699	0.000	0.000
1.421	2.386	1.014								
Race White	-0.432	-0.487	-0.377	0.649	0.614	0.686	0.490	0.394	0.000	0.000
0.863	0.659	0.035								
Renal Chronic Disease	0.565	0.443	0.686	1.759	1.558	1.986	0.451	0.696	0.000	0.000
1.243	1.771	0.201								
Respiratory Discomfort	0.225	0.171	0.280	1.253	1.186	1.323	0.387	0.509	0.000	0.000
1.090	1.264	0.067								
Schooling Elem 1-5	0.219	0.131	0.307	1.245	1.140	1.360	0.453	0.563	0.000	0.000
1.090	1.249	0.105								
Schooling Medium 1-3	-0.104	-0.187	-0.021	0.901	0.830	0.979	0.476	0.343	0.000	0.014
0.968	0.910	0.071								
Schooling Superior	-0.555	-0.676	-0.433	0.574	0.508	0.649	0.474	0.254	0.000	0.000
0.848	0.582	0.066								
SpO2 less 95\%	0.341	0.287	0.395	1.407	1.333	1.485	0.343	0.543	0.000	0.000
1.133	1.419	0.074								
Throat	-0.176	-0.238	-0.114	0.839	0.788	0.892	0.482	0.384	0.000	0.000
0.938	0.839	0.051								
Ventilator Invasive	2.171	2.095	2.247	8.768	8.125	9.461	0.346	0.860	0.000	0.000
2.184	8.678	0.643								
Vomiting	0.051	-0.044	0.146	1.053	0.957	1.158	0.467	0.399	0.000	0.292
1.018	1.054	0.096								

Recursive Feature Elimination:

Coefficients:

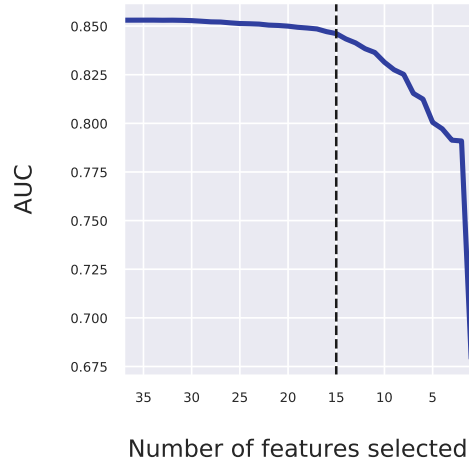|	SVM-l1	LR-l1
Age 0-30	0.603	0.199
Age 30-50	0.718	0.374
Schooling Superior	0.848	0.582
Other Symptoms	0.833	0.592
Cough	0.849	0.644
Antiviral Use	0.857	0.649
Race White	0.863	0.659
Age 50-65	0.887	0.723
Fever	0.898	0.748
Asthma	0.915	0.766
Throat	0.938	0.839
Diarrhea	0.941	0.841
Gender_F	0.947	0.858
Contact Birds Pigs	0.953	0.870
Schooling Medium 1-3	0.968	0.910
Postpartum	0.961	0.915
Cardiovascular Disease	1.008	1.034
Vomiting	1.018	1.054
Acute Respiratory Distress Syndrome	1.029	1.082
Other Risks	1.050	1.151
Hematologic Disease	1.050	1.159
Dyspnea	1.057	1.164
Another Chronic Pneumopathy	1.068	1.182
Diabetes	1.071	1.203
Schooling Elem 1-5	1.090	1.249
Respiratory Discomfort	1.090	1.264
Immunosuppression	1.102	1.324
SpO2 less 95\%	1.133	1.419
Contracted At Hospital	1.169	1.531
Liver Chronic Disease	1.183	1.569
ICU	1.207	1.676
Neurological Disease	1.238	1.713
Renal Chronic Disease	1.243	1.771
Public Hospital	1.282	1.971
Age 65-100	1.387	2.211
Race Indigenous	1.421	2.386
Ventilator Invasive	2.184	8.678

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.751	0.751	0.751	0.737	0.755
F1w	0.751	0.751	0.751	0.737	0.754
AUC	0.831	0.832	0.832	0.818	0.835
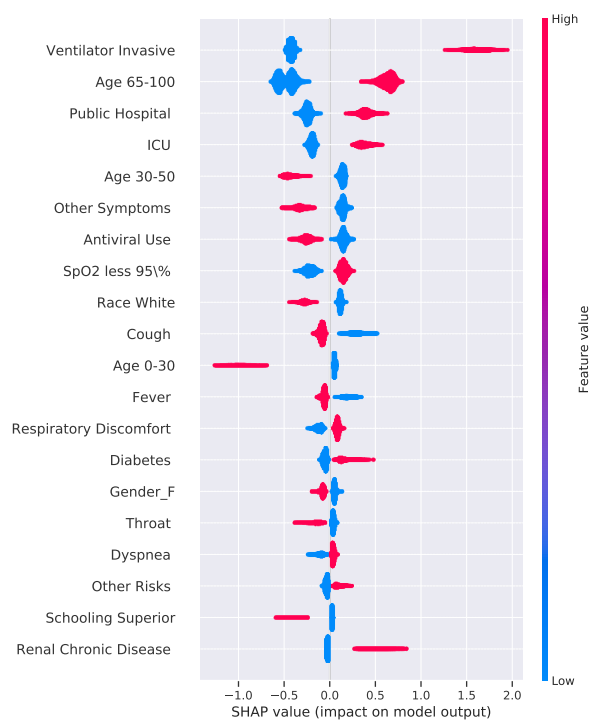
2.4 Mortality (advanced) small

Include variables: Antiviral, ICU, Ventilator

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	-1.806	-1.935	-1.677	0.164	0.144	0.187	0.484	0.147	0.0	0.000
0.571	0.170	0.020								
Antiviral Use	-0.369	-0.415	-0.323	0.691	0.660	0.724	0.477	0.441	0.0	0.000
0.875	0.705	0.031								
Cough	-0.581	-0.616	-0.546	0.559	0.540	0.579	0.580	0.431	0.0	0.000
0.825	0.612	0.019								
ICU	0.424	0.372	0.475	1.527	1.450	1.609	0.360	0.666	0.0	0.000
1.199	1.563	0.077								
Immunosuppression	0.296	0.169	0.423	1.344	1.184	1.526	0.461	0.570	0.0	0.000
1.124	1.356	0.160								
Liver Chronic Disease	0.586	0.351	0.821	1.797	1.421	2.272	0.462	0.661	0.0	0.000
1.274	1.797	0.376								
Neurological Disease	1.033	0.919	1.147	2.810	2.507	3.149	0.454	0.692	0.0	0.000
1.549	2.843	0.303								
Other Risks	0.222	0.173	0.271	1.249	1.189	1.312	0.439	0.537	0.0	0.000
1.100	1.279	0.060								
Postpartum	-0.571	-0.948	-0.193	0.565	0.388	0.824	0.465	0.286	0.0	0.003
0.826	0.602	0.177								
Race Indigenous	1.391	0.929	1.854	4.020	2.532	6.383	0.464	0.722	0.0	0.000
1.799	3.872	1.488								
Race White	-0.404	-0.452	-0.356	0.668	0.636	0.701	0.493	0.396	0.0	0.000
0.863	0.683	0.032								
Renal Chronic Disease	0.742	0.631	0.852	2.100	1.880	2.345	0.453	0.696	0.0	0.000
1.358	2.135	0.220								
Schooling Superior	-0.955	-1.063	-0.846	0.385	0.345	0.429	0.477	0.259	0.0	0.000
0.717	0.391	0.040								
Ventilator Invasive	2.238	2.168	2.309	9.379	8.737	10.069	0.349	0.862	0.0	0.000
2.406	9.379	0.642								
Vomiting	-0.196	-0.280	-0.111	0.822	0.756	0.895	0.470	0.397	0.0	0.000
0.932	0.839	0.066								
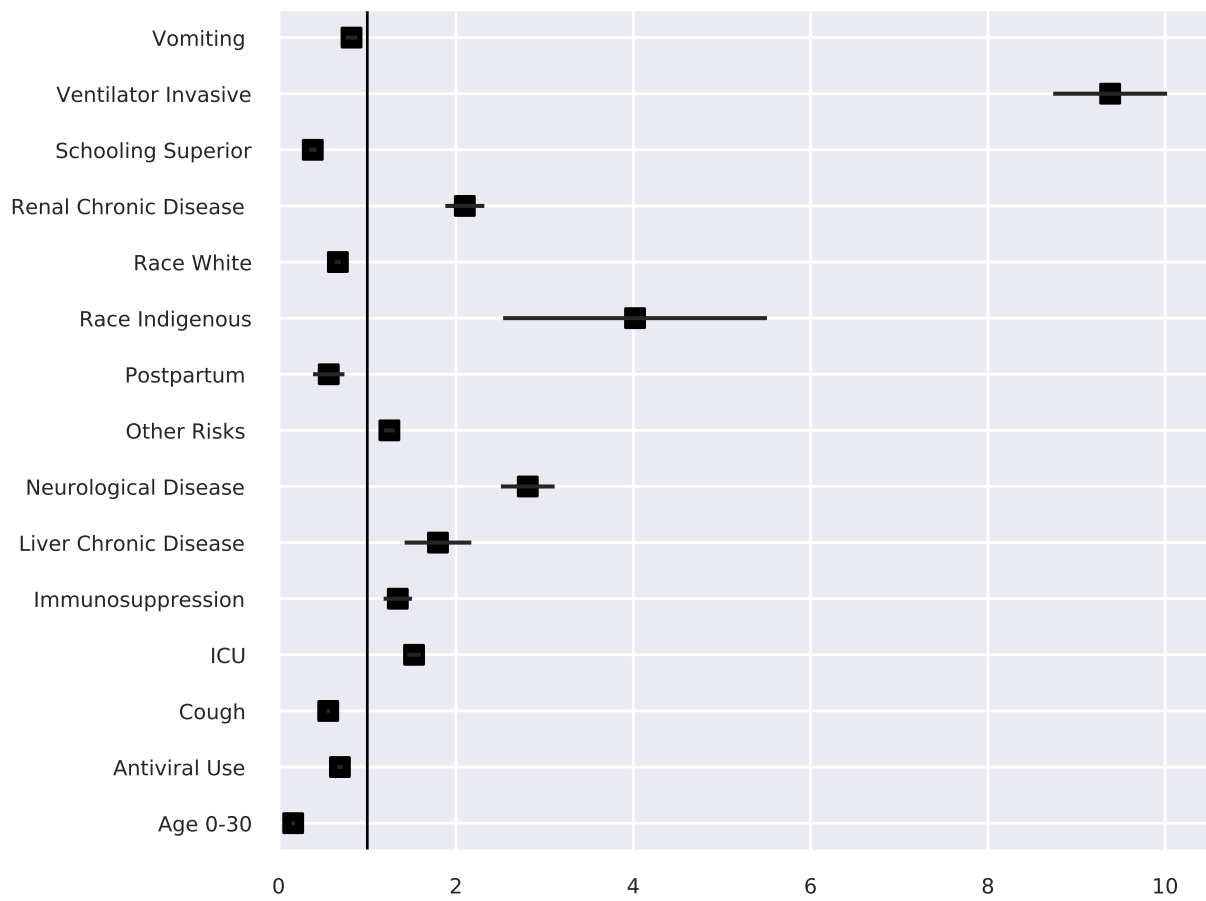
Recursive Feature Elimination:

Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.571	0.170
Schooling Superior	0.717	0.391
Postpartum	0.826	0.602
Cough	0.825	0.612
Race White	0.863	0.683
Antiviral Use	0.875	0.705
Vomiting	0.932	0.839
Other Risks	1.100	1.279
Immunosuppression	1.124	1.356
ICU	1.199	1.563
Liver Chronic Disease	1.274	1.797
Renal Chronic Disease	1.358	2.135
Neurological Disease	1.549	2.843
Race Indigenous	1.799	3.872
Ventilator Invasive	2.406	9.379

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.712	0.712	0.712	0.706	0.71
F1w	0.705	0.705	0.705	0.694	0.70
AUC	0.773	0.773	0.773	0.767	0.77
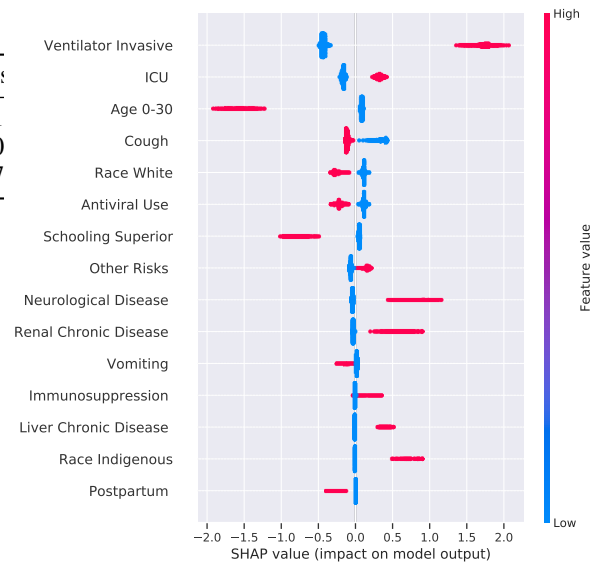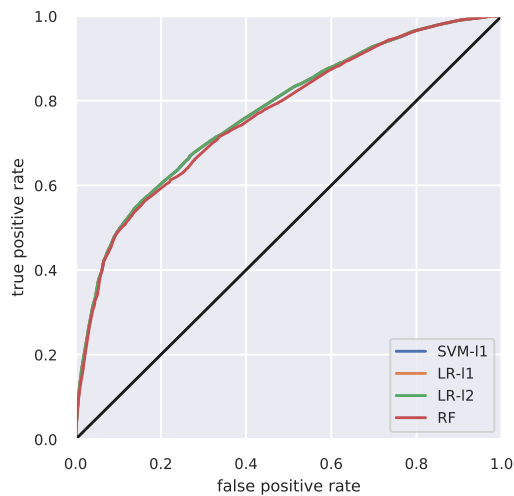
2.5   ICU

SVM-l1	Coef / LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	0.167	0.120	0.215	1.182	1.128	1.239	0.329	0.374	0.000	0.000
1.074	1.183	0.054								
Age 0-30	-0.214	-0.317	-0.112	0.807	0.729	0.894	0.346	0.240	0.000	0.000
0.934	0.819	0.078								
Age 30-50	-0.179	-0.237	-0.121	0.836	0.789	0.886	0.364	0.274	0.000	0.000
0.938	0.846	0.047								
Age 65-100	0.111	0.059	0.163	1.117	1.061	1.177	0.302	0.394	0.000	0.000
1.054	1.125	0.056								
Another Chronic Pneumopathy	0.287	0.186	0.389	1.333	1.205	1.475	0.335	0.469	0.000	0.000
1.142	1.330	0.128								
Antiviral Use	0.312	0.269	0.356	1.367	1.308	1.428	0.313	0.387	0.000	0.000
1.140	1.368	0.059								
BMI 25-30	-0.526	-0.670	-0.383	0.591	0.512	0.682	0.472	0.336	0.000	0.000
0.817	0.633	0.079								
BMI 30-40	-0.393	-0.549	-0.238	0.675	0.578	0.788	0.480	0.339	0.000	0.000
0.935	0.870	0.097								
BMI 40-100	-0.213	-0.444	0.018	0.808	0.641	1.018	0.339	0.486	0.000	0.071
1.005	1.005	0.167								
Cardiovascular Disease	0.226	0.179	0.273	1.253	1.196	1.313	0.305	0.410	0.000	0.000
1.104	1.258	0.057								
Contracted At Hospital	0.390	0.262	0.517	1.477	1.300	1.678	0.337	0.473	0.000	0.000
1.193	1.477	0.177								
Cough	-0.300	-0.352	-0.248	0.741	0.703	0.780	0.394	0.325	0.000	0.000
0.882	0.747	0.038								
Diabetes	0.155	0.105	0.204	1.167	1.111	1.226	0.317	0.407	0.000	0.000
1.072	1.171	0.056								
Diarrhea	-0.148	-0.213	-0.082	0.863	0.808	0.921	0.347	0.296	0.000	0.000
0.943	0.865	0.055								
Dyspnea	0.202	0.151	0.254	1.224	1.162	1.289	0.287	0.360	0.000	0.000
1.087	1.231	0.062								
Fever	-0.073	-0.123	-0.023	0.929	0.884	0.977	0.371	0.330	0.000	0.004
0.972	0.936	0.045								
Gender_F	-0.173	-0.216	-0.131	0.841	0.806	0.877	0.351	0.326	0.000	0.000
0.933	0.845	0.035								
Hematologic Disease	0.134	-0.072	0.340	1.143	0.930	1.405	0.339	0.414	0.018	0.203
1.059	1.133	0.213								
Immunosuppression	0.139	0.021	0.256	1.149	1.021	1.292	0.338	0.409	0.000	0.021
1.061	1.147	0.128								
Liver Chronic Disease	0.149	-0.060	0.358	1.161	0.942	1.430	0.339	0.410	0.034	0.162
1.064	1.155	0.219								
Neurological Disease	0.041	-0.061	0.143	1.042	0.941	1.154	0.337	0.425	0.000	0.430
1.020	1.039	0.101								
Other Risks	0.342	0.295	0.389	1.408	1.344	1.476	0.313	0.418	0.000	0.000
1.162	1.414	0.064								
Public Hospital	-0.417	-0.462	-0.373	0.659	0.630	0.689	0.367	0.296	0.000	0.000
0.842	0.661	0.029								
Race White	0.019	-0.028	0.066	1.019	0.973	1.068	0.335	0.352	0.008	0.427
1.010	1.022	0.046								
Renal Chronic Disease	0.430	0.333	0.528	1.538	1.395	1.695	0.333	0.488	0.000	0.000
1.217	1.539	0.143								
Respiratory Discomfort	0.088	0.041	0.135	1.092	1.042	1.145	0.308	0.361	0.000	0.000
1.040	1.094	0.050								
Schooling Elem 1-5	-0.479	-0.562	-0.396	0.619	0.570	0.673	0.345	0.278	0.000	0.000
0.823	0.621	0.049								
Schooling Elem 6-9	-0.280	-0.375	-0.186	0.756	0.687	0.831	0.343	0.300	0.001	0.000
0.893	0.759	0.069								
Schooling Medium 1-3	-0.162	-0.232	-0.091	0.851	0.793	0.913	0.345	0.299	0.000	0.000
0.938	0.854	0.058								
SpO2 less 95\%	0.456	0.409	0.504	1.578	1.505	1.655	0.262	0.394	0.000	0.000
1.209	1.585	0.073								
Throat	-0.395	-0.451	-0.340	0.673	0.637	0.712	0.360	0.266	0.000	0.000
0.857	0.674	0.036								
Vomiting	-0.154	-0.239	-0.068	0.858	0.788	0.934	0.345	0.286	0.000	0.000
0.942	0.861	0.070								
Xray Torax Result Consolidation	0.477	0.361	0.592	1.611	1.435	1.807	0.336	0.466	0.000	0.000
1.235	1.607	0.176								
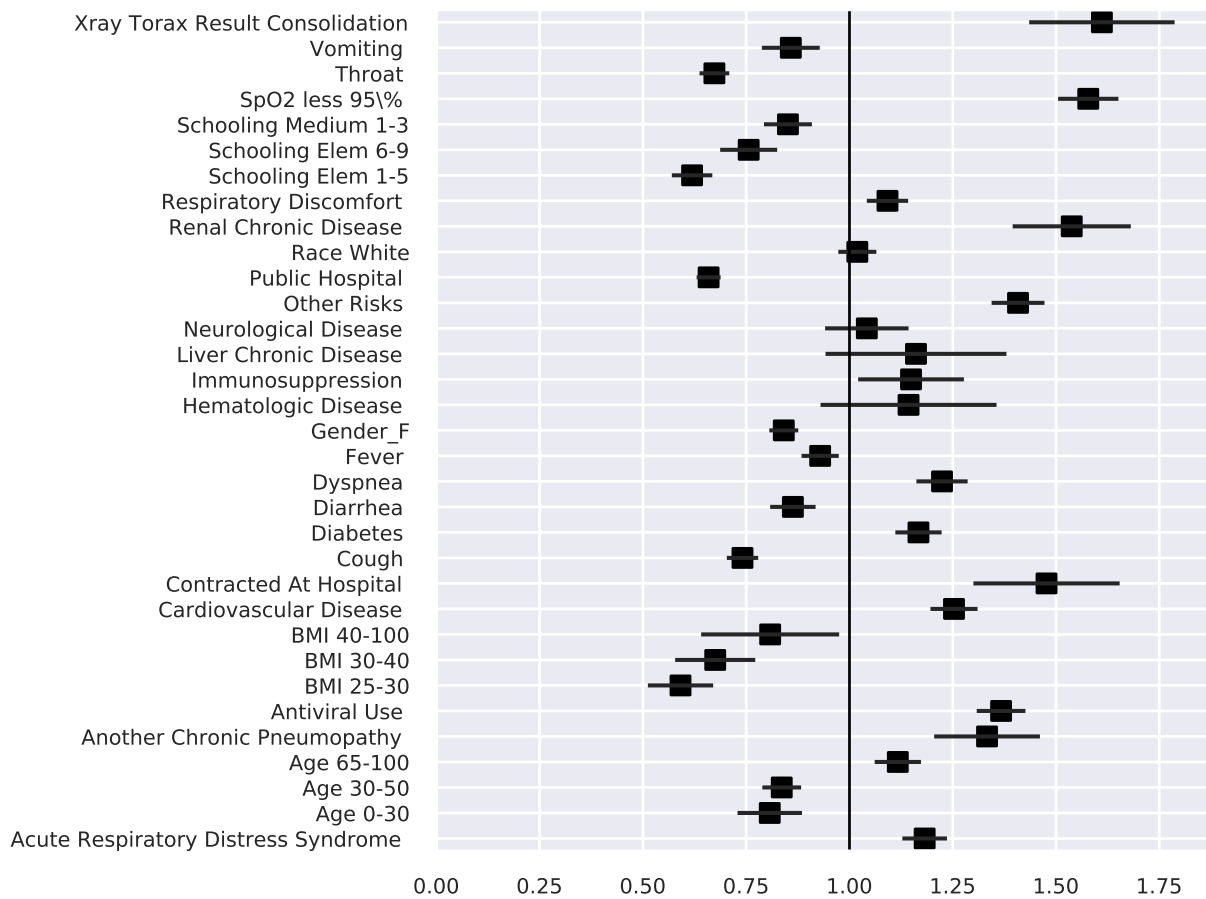
Recursive Feature Elimination:
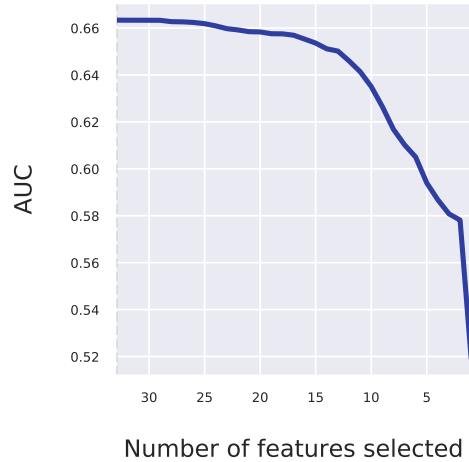
Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.644	0.646	0.646	0.626	0.649
F1w	0.594	0.597	0.597	0.483	0.598
AUC	0.643	0.643	0.643	0.627	0.648
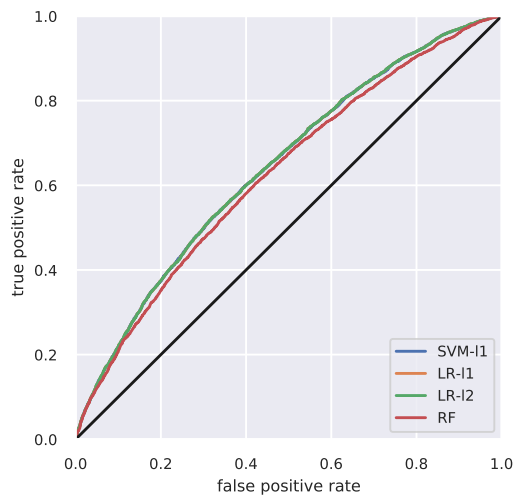
Coefficients:

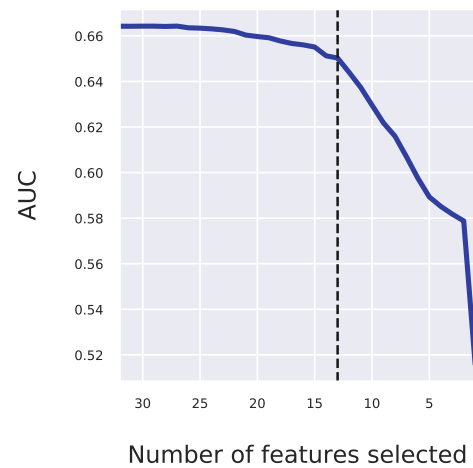|	SVM-l1	LR-l1
Schooling Elem 1-5	0.823	0.621
BMI 25-30	0.817	0.633
Public Hospital	0.842	0.661
Throat	0.857	0.674
Cough	0.882	0.747
Schooling Elem 6-9	0.893	0.759
Age 0-30	0.934	0.819
Gender_F	0.933	0.845
Age 30-50	0.938	0.846
Schooling Medium 1-3	0.938	0.854
Vomiting	0.942	0.861
Diarrhea	0.943	0.865
BMI 30-40	0.935	0.870
Fever	0.972	0.936
BMI 40-100	1.005	1.005
Race White	1.010	1.022
Neurological Disease	1.020	1.039
Respiratory Discomfort	1.040	1.094
Age 65-100	1.054	1.125
Hematologic Disease	1.059	1.133
Immunosuppression	1.061	1.147
Liver Chronic Disease	1.064	1.155
Diabetes	1.072	1.171
Acute Respiratory Distress Syndrome	1.074	1.183
Dyspnea	1.087	1.231
Cardiovascular Disease	1.104	1.258
Another Chronic Pneumopathy	1.142	1.330
Antiviral Use	1.140	1.368
Other Risks	1.162	1.414
Contracted At Hospital	1.193	1.477
Renal Chronic Disease	1.217	1.539
SpO2 less 95\%	1.209	1.585
Xray Torax Result Consolidation	1.235	1.607
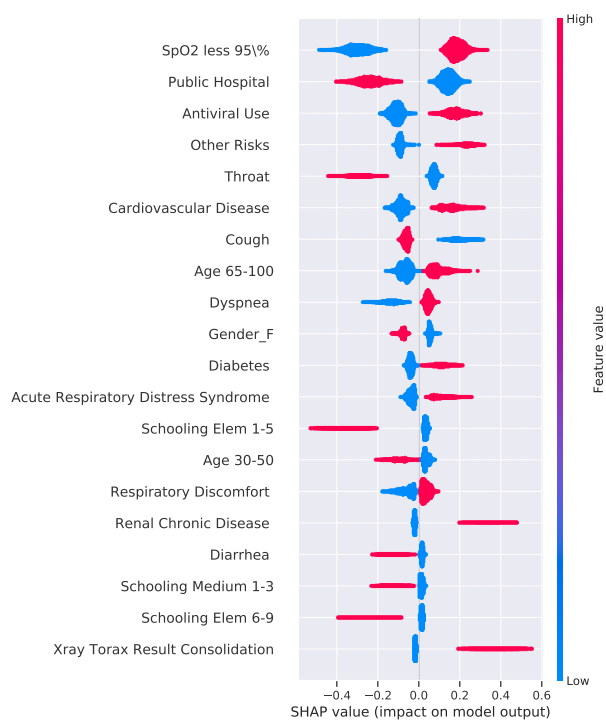
2.6   ICU small

SVM-l1	Coef / LR-l1	2.5 / err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	0.026	-0.020	0.071	1.026	0.981	1.073	0.331	0.371	0.000	0.265
1.077	1.182	0.045								
Age 0-30	-0.650	-0.745	-0.555	0.522	0.475	0.574	0.347	0.241	0.000	0.000
0.839	0.643	0.047								
Another Chronic Pneumopathy	0.369	0.271	0.468	1.447	1.311	1.596	0.335	0.475	0.000	0.000
1.240	1.576	0.136								
Contracted At Hospital	0.278	0.154	0.402	1.320	1.166	1.494	0.338	0.471	0.000	0.000
1.215	1.519	0.154								
Dyspnea	-0.152	-0.189	-0.114	0.859	0.828	0.892	0.290	0.360	0.000	0.000
1.142	1.366	0.031								
Fever	-0.594	-0.631	-0.557	0.552	0.532	0.573	0.366	0.332	0.000	0.000
0.940	0.870	0.020								
Immunosuppression	0.063	-0.050	0.175	1.065	0.951	1.192	0.339	0.413	0.000	0.275
1.066	1.149	0.114								
Liver Chronic Disease	0.127	-0.078	0.332	1.135	0.925	1.393	0.340	0.430	0.004	0.225
1.102	1.226	0.210								
Neurological Disease	0.183	0.085	0.281	1.201	1.088	1.325	0.337	0.426	0.000	0.000
1.128	1.298	0.113								
Other Risks	0.213	0.169	0.257	1.237	1.184	1.292	0.315	0.415	0.000	0.000
1.197	1.489	0.053								
Race White	-0.102	-0.144	-0.059	0.903	0.866	0.943	0.335	0.354	0.004	0.000
1.041	1.095	0.037								
Renal Chronic Disease	0.462	0.369	0.556	1.588	1.446	1.743	0.334	0.497	0.000	0.000
1.321	1.805	0.142								
Schooling Elem 1-5	-0.533	-0.613	-0.454	0.587	0.542	0.635	0.347	0.275	0.000	0.000
0.834	0.650	0.045								

Recursive Feature Elimination:

Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.839	0.643
Schooling Elem 1-5	0.834	0.650
Fever	0.940	0.870
Race White	1.041	1.095
Immunosuppression	1.066	1.149
Acute Respiratory Distress Syndrome	1.077	1.182
Liver Chronic Disease	1.102	1.226
Neurological Disease	1.128	1.298
Dyspnea	1.142	1.366
Other Risks	1.197	1.489
Contracted At Hospital	1.215	1.519
Another Chronic Pneumopathy	1.240	1.576
Renal Chronic Disease	1.321	1.805
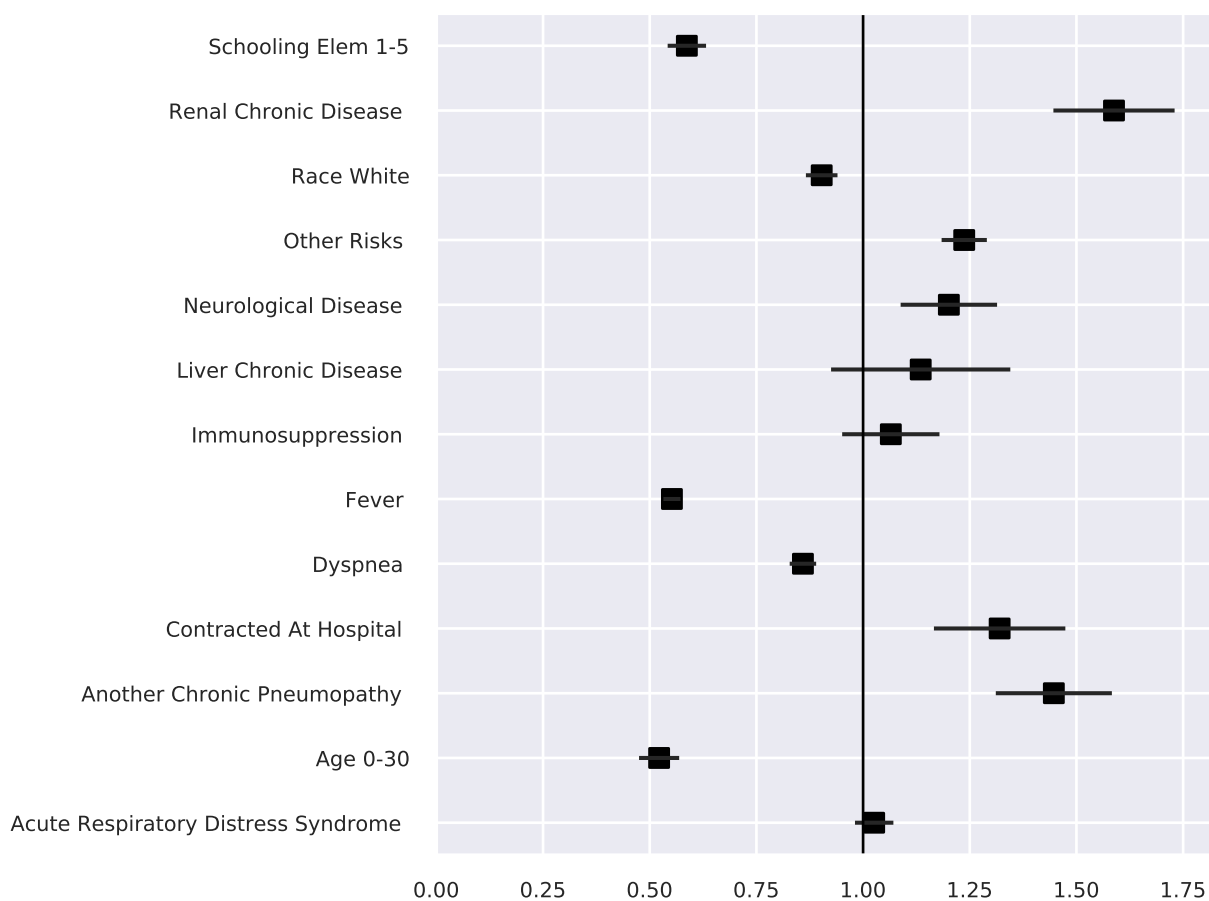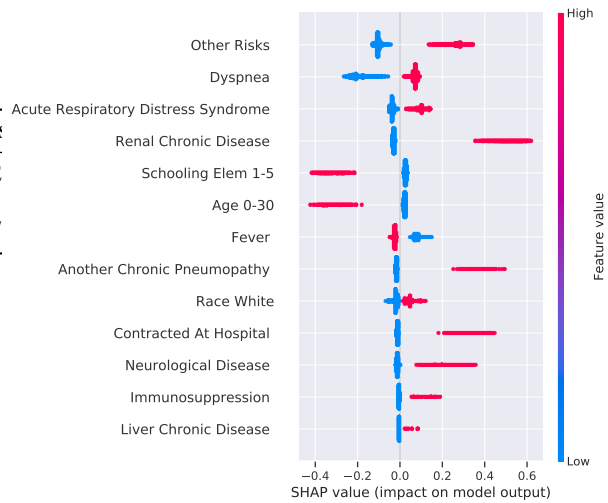
Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.626	0.625	0.625	0.625	0.62
F1w	0.524	0.522	0.522	0.483	0.51
AUC	0.575	0.575	0.575	0.573	0.57

2.7 Ventilator

SVM-l1 / LR-l1	Coef	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	0.067	0.015	0.119	1.070	1.015	1.127	0.211	0.261	0.000	0.011
1.074	1.237	0.055								
Age 0-30	-0.651	-0.777	-0.524	0.522	0.460	0.592	0.230	0.128	0.000	0.000
0.928	0.723	0.062								
Another Chronic Pneumopathy	0.225	0.115	0.334	1.252	1.122	1.397	0.219	0.331	0.000	0.000
1.117	1.322	0.130								
Antiviral Use	0.229	0.180	0.277	1.257	1.198	1.320	0.200	0.265	0.000	0.000
1.100	1.337	0.059								
Cardiovascular Disease	0.067	0.017	0.118	1.070	1.017	1.125	0.196	0.279	0.000	0.009
1.084	1.276	0.053								
Contracted At Hospital	0.123	-0.016	0.263	1.131	0.984	1.301	0.221	0.326	0.000	0.083
1.141	1.422	0.147								
Cough	-0.837	-0.889	-0.784	0.433	0.411	0.456	0.274	0.209	0.000	0.000
0.857	0.639	0.022								
Diabetes	0.217	0.164	0.271	1.243	1.178	1.311	0.199	0.297	0.000	0.000
1.115	1.360	0.065								
Diarrhea	-0.280	-0.357	-0.204	0.756	0.700	0.816	0.231	0.178	0.000	0.000
0.935	0.803	0.056								
Dyspnea	-0.071	-0.125	-0.016	0.932	0.882	0.984	0.143	0.253	0.000	0.011
1.125	1.500	0.050								
Fever	-0.540	-0.591	-0.490	0.583	0.554	0.613	0.250	0.215	0.000	0.000
0.956	0.884	0.029								
Gender_F	-0.472	-0.518	-0.426	0.623	0.595	0.653	0.233	0.211	0.000	0.000
0.948	0.846	0.028								
Immunosuppression	0.026	-0.103	0.154	1.026	0.902	1.167	0.222	0.275	0.001	0.698
1.047	1.145	0.124								
Liver Chronic Disease	0.141	-0.082	0.364	1.152	0.921	1.440	0.223	0.313	0.003	0.216
1.091	1.255	0.231								
Neurological Disease	-0.070	-0.184	0.044	0.932	0.832	1.045	0.222	0.274	0.000	0.228
1.003	1.014	0.100								
Other Risks	0.154	0.102	0.205	1.166	1.107	1.228	0.204	0.280	0.000	0.000
1.121	1.404	0.059								
Other Symptoms	-0.516	-0.568	-0.463	0.597	0.567	0.629	0.239	0.189	0.000	0.000
0.940	0.821	0.030								
Public Hospital	-0.082	-0.129	-0.035	0.921	0.879	0.965	0.203	0.259	0.000	0.001
1.060	1.198	0.042								
Race White	-0.377	-0.430	-0.324	0.686	0.651	0.723	0.232	0.205	0.000	0.000
0.949	0.846	0.035								
Renal Chronic Disease	0.281	0.178	0.385	1.325	1.195	1.469	0.218	0.353	0.000	0.000
1.167	1.477	0.130								
Respiratory Discomfort	0.145	0.093	0.197	1.156	1.097	1.218	0.160	0.264	0.000	0.000
1.121	1.413	0.059								
Schooling Medium 1-3	-0.240	-0.322	-0.159	0.786	0.725	0.853	0.228	0.189	0.000	0.000
0.968	0.894	0.061								
Schooling Superior	-0.309	-0.424	-0.194	0.734	0.655	0.824	0.227	0.167	0.000	0.000
0.971	0.889	0.079								
SpO2 less 95\%	0.416	0.364	0.469	1.516	1.438	1.598	0.134	0.285	0.000	0.000
1.218	1.924	0.078								
Throat	-0.303	-0.366	-0.240	0.739	0.693	0.787	0.236	0.179	0.000	0.000
0.900	0.712	0.046								
Vomiting	-0.262	-0.363	-0.162	0.769	0.696	0.850	0.228	0.176	0.000	0.000
0.938	0.816	0.073								
Xray Torax Result Consolidation	0.348	0.222	0.474	1.417	1.249	1.606	0.221	0.317	0.000	0.000
1.171	1.537	0.168								

Recursive Feature Elimination:

AUC vs Number of features selected

Coefficients:

	SVM-l1	LR-l1
Cough	0.857	0.639
Throat	0.900	0.712
Age 0-30	0.928	0.723
Diarrhea	0.935	0.803
Vomiting	0.938	0.816
Other Symptoms	0.940	0.821
Race White	0.949	0.846
Gender_F	0.948	0.846
Fever	0.956	0.884
Schooling Superior	0.971	0.889
Schooling Medium 1-3	0.968	0.894
Neurological Disease	1.003	1.014
Immunosuppression	1.047	1.145
Public Hospital	1.060	1.198
Acute Respiratory Distress Syndrome	1.074	1.237
Liver Chronic Disease	1.091	1.255
Cardiovascular Disease	1.084	1.276
Another Chronic Pneumopathy	1.117	1.322
Antiviral Use	1.100	1.337
Diabetes	1.115	1.360
Other Risks	1.121	1.404
Respiratory Discomfort	1.121	1.413
Contracted At Hospital	1.141	1.422
Renal Chronic Disease	1.167	1.477
Dyspnea	1.125	1.500
Xray Torax Result Consolidation	1.171	1.537
SpO2 less 95\%	1.218	1.924

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.745	0.744	0.744	0.741	0.744
F1w	0.667	0.664	0.665	0.631	0.655
AUC	0.672	0.674	0.674	0.665	0.679

ROC curve: true positive rate vs false positive rate (SVM-l1, LR-l1, LR-l2, RF)

SHAP value (impact on model output)
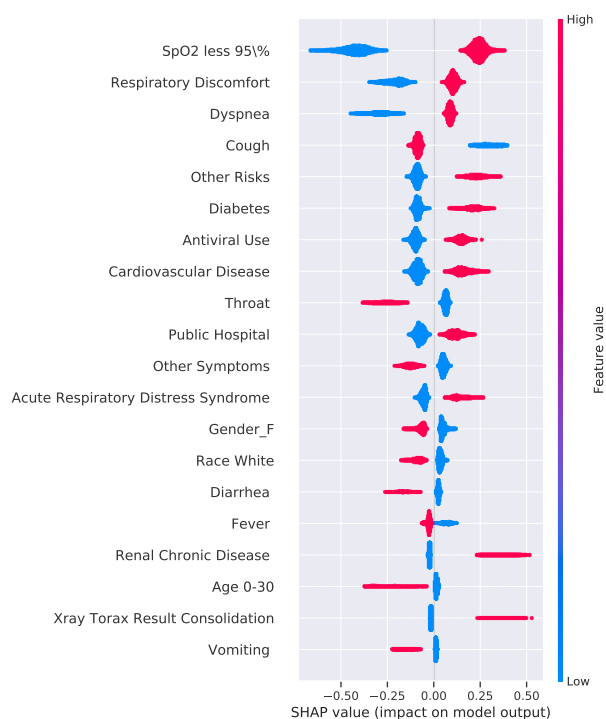
2.8 Ventilator small

| | Coef | 2.5 | 97.5 | Odds Ratio | 2.5 | 97.5 | Avg-0 | Avg-1 | KS-pv | pvalue |
SVM-l1	LR-l1	err								
Acute Respiratory Distress Syndrome	0.066	0.015	0.118	1.069	1.015	1.125	0.214	0.263	0.0	0.011
1.084	1.264	0.054								
Age 30-50	-0.822	-0.880	-0.764	0.440	0.415	0.466	0.256	0.145	0.0	0.000
0.843	0.562	0.025								
Another Chronic Pneumopathy	0.090	-0.018	0.199	1.095	0.982	1.220	0.223	0.321	0.0	0.102
1.103	1.270	0.113								
Cough	-0.851	-0.900	-0.801	0.427	0.406	0.449	0.283	0.211	0.0	0.000
0.862	0.658	0.021								
Dyspnea	0.011	-0.039	0.062	1.011	0.961	1.064	0.148	0.255	0.0	0.665
1.189	1.771	0.050								
Fever	-0.523	-0.571	-0.475	0.593	0.565	0.622	0.256	0.217	0.0	0.000
0.971	0.924	0.028								
Immunosuppression	-0.045	-0.170	0.080	0.956	0.843	1.083	0.225	0.287	0.0	0.479
1.050	1.144	0.113								
Other Risks	0.044	-0.005	0.093	1.045	0.995	1.098	0.206	0.287	0.0	0.080
1.135	1.432	0.050								
Public Hospital	-0.055	-0.101	-0.010	0.946	0.904	0.991	0.206	0.260	0.0	0.018
1.075	1.239	0.042								
Renal Chronic Disease	0.340	0.239	0.441	1.405	1.270	1.553	0.220	0.361	0.0	0.000
1.245	1.738	0.135								
Respiratory Discomfort	0.247	0.199	0.295	1.280	1.220	1.344	0.162	0.268	0.0	0.000
1.199	1.741	0.060								
Throat	-0.324	-0.386	-0.262	0.723	0.680	0.770	0.239	0.179	0.0	0.000
0.891	0.697	0.043								
Xray Torax Result Consolidation	0.291	0.167	0.416	1.338	1.181	1.516	0.224	0.317	0.0	0.000
1.175	1.534	0.157								

Recursive Feature Elimination:

Number of features selected

Coefficients:

	SVM-l1	LR-l1
Age 30-50	0.843	0.562
Cough	0.862	0.658
Throat	0.891	0.697
Fever	0.971	0.924
Immunosuppression	1.050	1.144
Public Hospital	1.075	1.239
Acute Respiratory Distress Syndrome	1.084	1.264
Another Chronic Pneumopathy	1.103	1.270
Other Risks	1.135	1.432
Xray Torax Result Consolidation	1.175	1.534
Renal Chronic Disease	1.245	1.738
Respiratory Discomfort	1.199	1.741
Dyspnea	1.189	1.771
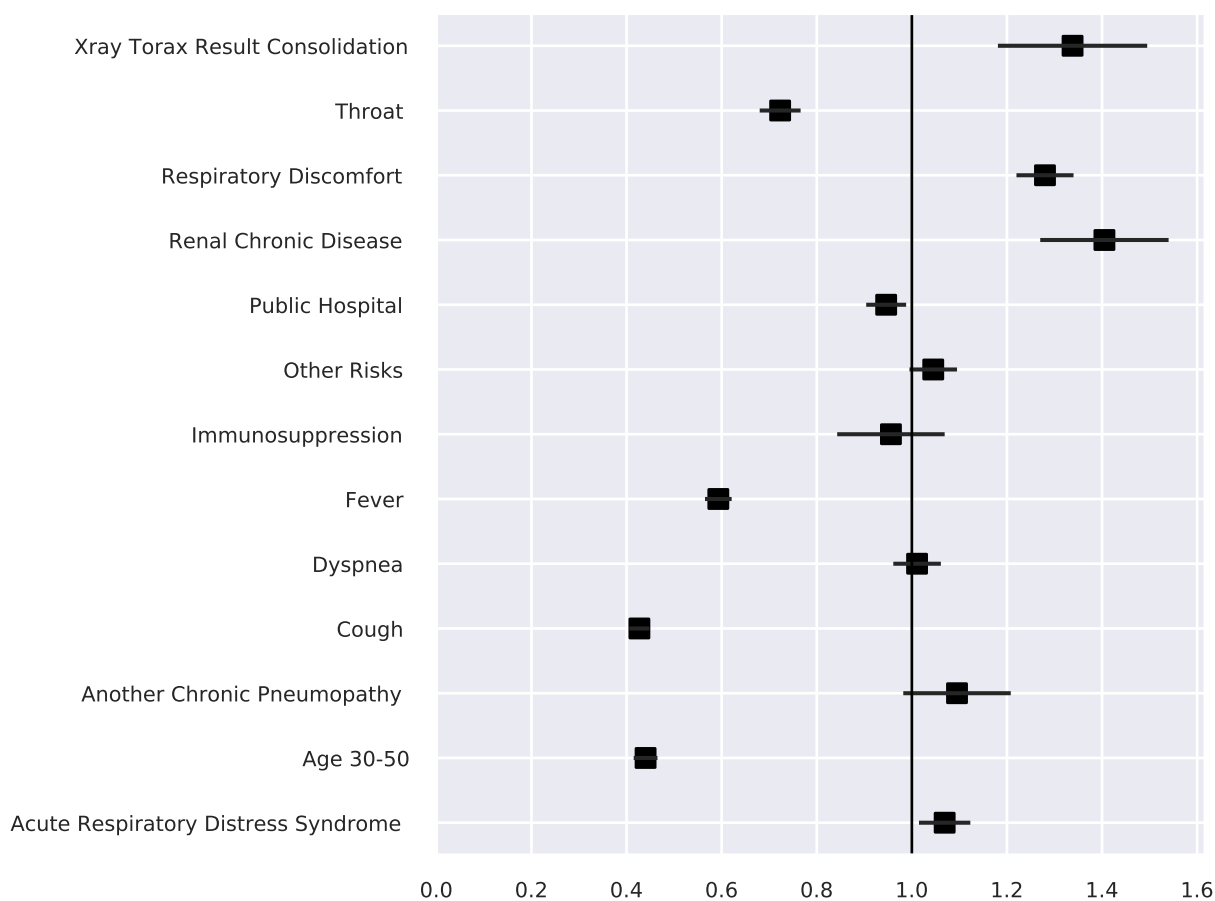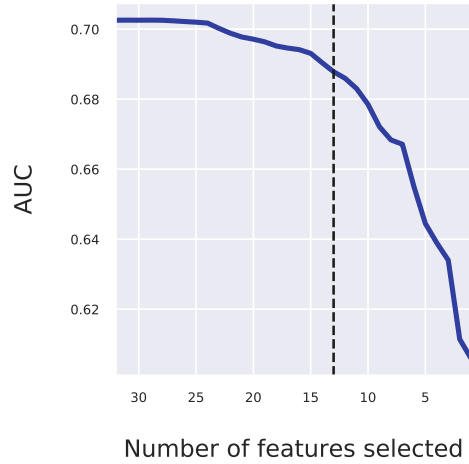
Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.747	0.748	0.748	0.750	0.75
F1w	0.658	0.655	0.655	0.643	0.65
AUC	0.636	0.637	0.637	0.635	0.63

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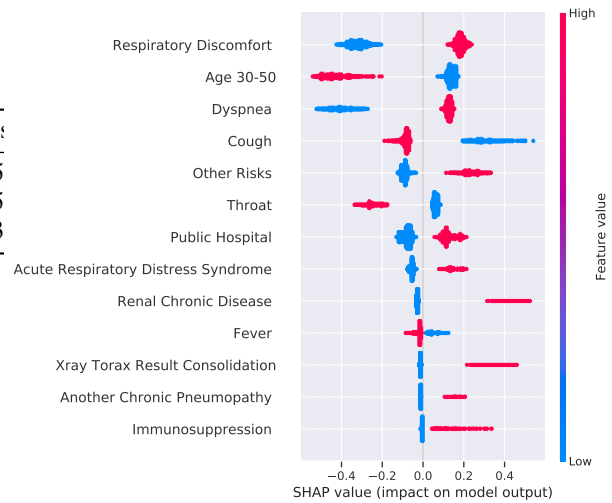
2.9 Ventilator with ICU

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Acute Respiratory Distress Syndrome	-0.065	-0.124	-0.006	0.937	0.884	0.994	0.213	0.262	0.000	0.031
	1.050	1.189	0.053							
Age 0-30	-0.997	-1.136	-0.858	0.369	0.321	0.424	0.232	0.129	0.000	0.000
	0.890	0.645	0.048							
Age 30-50	-0.907	-0.975	-0.838	0.404	0.377	0.432	0.256	0.144	0.000	0.000
	0.869	0.610	0.027							
Another Chronic Pneumopathy	-0.004	-0.129	0.121	0.996	0.879	1.129	0.221	0.333	0.000	0.952
	1.035	1.095	0.117							
Antiviral Use	0.096	0.041	0.152	1.101	1.042	1.164	0.202	0.267	0.000	0.001
	1.049	1.156	0.059							
Asthma	-0.258	-0.432	-0.084	0.773	0.649	0.920	0.227	0.184	0.024	0.004
	0.912	0.753	0.124							
Cardiovascular Disease	-0.267	-0.325	-0.209	0.766	0.723	0.812	0.198	0.282	0.000	0.000
	1.015	1.042	0.043							
Contracted At Hospital	-0.070	-0.226	0.086	0.932	0.798	1.090	0.223	0.329	0.000	0.380
	1.080	1.224	0.134							
Cough	-0.921	-0.980	-0.861	0.398	0.375	0.423	0.278	0.211	0.000	0.000
	0.898	0.711	0.023							
Diabetes	0.035	-0.026	0.096	1.035	0.974	1.100	0.202	0.298	0.000	0.266
	1.070	1.249	0.061							
Diarrhea	-0.215	-0.300	-0.129	0.807	0.740	0.879	0.232	0.184	0.000	0.000
	0.959	0.865	0.067							
Dyspnea	-0.269	-0.331	-0.207	0.764	0.718	0.813	0.147	0.254	0.000	0.000
	1.127	1.480	0.046							
Fever	-0.684	-0.742	-0.626	0.505	0.476	0.535	0.255	0.216	0.000	0.000
	0.967	0.911	0.029							
Gender_F	-0.571	-0.624	-0.519	0.565	0.536	0.595	0.236	0.212	0.000	0.000
	0.967	0.898	0.029							
Hematologic Disease	-0.039	-0.287	0.210	0.962	0.750	1.233	0.225	0.291	0.039	0.760
	1.024	1.050	0.212							
ICU	2.337	2.281	2.392	10.346	9.786	10.939	0.067	0.533	0.000	0.000
	2.520	16.282	0.560							
Immunosuppression	-0.030	-0.177	0.117	0.970	0.838	1.124	0.224	0.286	0.000	0.686
	1.040	1.127	0.132							
Liver Chronic Disease	0.047	-0.211	0.305	1.048	0.810	1.356	0.225	0.320	0.001	0.723
	1.062	1.206	0.238							
Neurological Disease	-0.324	-0.454	-0.195	0.723	0.635	0.823	0.224	0.269	0.002	0.000
	0.960	0.908	0.088							
Other Risks	-0.152	-0.211	-0.093	0.859	0.810	0.912	0.205	0.284	0.000	0.000
	1.044	1.142	0.049							
Other Symptoms	-0.562	-0.621	-0.503	0.570	0.537	0.604	0.238	0.198	0.000	0.000
	0.957	0.871	0.033							
Public Hospital	0.063	0.010	0.117	1.065	1.010	1.124	0.207	0.257	0.000	0.020
	1.176	1.756	0.055							
Race White	-0.527	-0.587	-0.467	0.590	0.556	0.627	0.233	0.208	0.000	0.000
	0.931	0.781	0.034							
Renal Chronic Disease	0.020	-0.098	0.138	1.020	0.907	1.148	0.220	0.350	0.000	0.742
	1.062	1.181	0.113							
Respiratory Discomfort	0.143	0.083	0.202	1.153	1.087	1.224	0.160	0.268	0.000	0.000
	1.145	1.543	0.066							
Schooling Medium 1-3	-0.155	-0.247	-0.062	0.857	0.781	0.940	0.230	0.189	0.000	0.001
	0.998	0.972	0.076							
Schooling Superior	-0.362	-0.490	-0.234	0.696	0.613	0.792	0.229	0.176	0.000	0.000
	0.937	0.837	0.083							
SpO2 less 95\%	0.188	0.129	0.248	1.207	1.137	1.281	0.133	0.289	0.000	0.000
	1.158	1.701	0.070							
Throat	-0.107	-0.178	-0.035	0.899	0.837	0.965	0.238	0.181	0.000	0.003
	0.958	0.858	0.062							
Vomiting	-0.245	-0.358	-0.132	0.783	0.699	0.876	0.230	0.178	0.000	0.000
	0.964	0.876	0.084							
Xray Torax Result Consolidation	0.108	-0.034	0.249	1.114	0.967	1.283	0.223	0.319	0.000	0.136
	1.076	1.248	0.147							

Xray Torax Result Consolidation
Vomiting
Throat
SpO2 less 95\%
Schooling Superior
Schooling Medium 1-3
Respiratory Discomfort
Renal Chronic Disease
Race White
Public Hospital
Other Symptoms
Other Risks
Neurological Disease
Liver Chronic Disease
Immunosuppression
ICU
Hematologic Disease
Gender_F
Fever
Dyspnea
Diarrhea
Diabetes
Cough
Contracted At Hospital
Cardiovascular Disease
Asthma
Antiviral Use
Another Chronic Pneumopathy
Age 30-50
Age 0-30
Acute Respiratory Distress Syndrome

0   2   4   6   8   10

Recursive Feature Elimination:

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.800	0.801	0.801	0.751	0.802
F1w	0.797	0.798	0.798	0.645	0.799
AUC	0.833	0.834	0.834	0.826	0.835
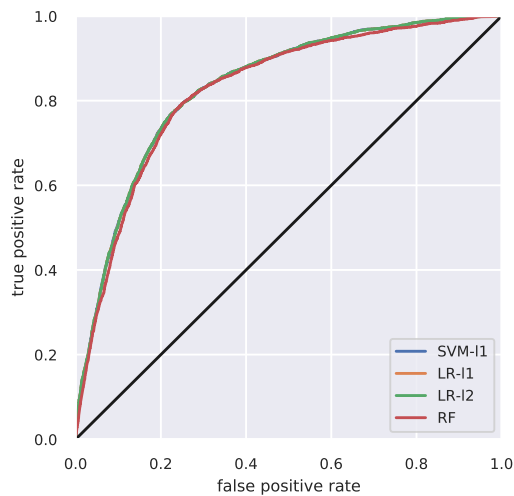
Coefficients:

	SVM-l1	LR-l1
Age 30-50	0.869	0.610
Age 0-30	0.890	0.645
Cough	0.898	0.711
Asthma	0.912	0.753
Race White	0.931	0.781
Schooling Superior	0.937	0.837
Throat	0.958	0.858
Diarrhea	0.959	0.865
Other Symptoms	0.957	0.871
Vomiting	0.964	0.876
Gender_F	0.967	0.898
Neurological Disease	0.960	0.908
Fever	0.967	0.911
Schooling Medium 1-3	0.998	0.972
Cardiovascular Disease	1.015	1.042
Hematologic Disease	1.024	1.050
Another Chronic Pneumopathy	1.035	1.095
Immunosuppression	1.040	1.127
Other Risks	1.044	1.142
Antiviral Use	1.049	1.156
Renal Chronic Disease	1.062	1.181
Acute Respiratory Distress Syndrome	1.050	1.189
Liver Chronic Disease	1.062	1.206
Contracted At Hospital	1.080	1.224
Xray Torax Result Consolidation	1.076	1.248
Diabetes	1.070	1.249
Dyspnea	1.127	1.480
Respiratory Discomfort	1.145	1.543
SpO2 less 95\%	1.158	1.701
Public Hospital	1.176	1.756
ICU	2.520	16.282
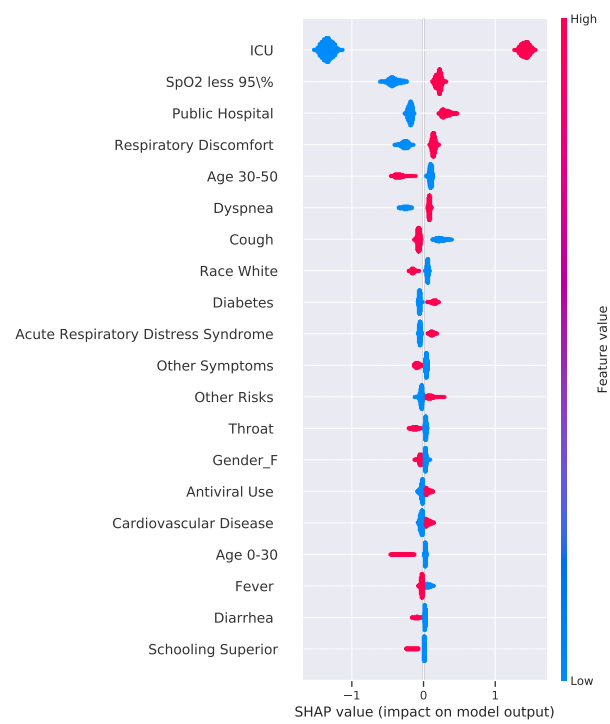
2.10 Ventilator with ICU small

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	-1.205	-1.337	-1.072	0.300	0.263	0.342	0.230	0.132	0.0	0.000
0.888	0.625	0.037								
Age 30-50	-1.041	-1.105	-0.978	0.353	0.331	0.376	0.253	0.144	0.0	0.000
0.859	0.572	0.022								
Antiviral Use	-0.084	-0.137	-0.031	0.919	0.872	0.969	0.201	0.263	0.0	0.002
1.047	1.158	0.047								
Cough	-1.360	-1.411	-1.309	0.257	0.244	0.270	0.276	0.209	0.0	0.000
0.888	0.680	0.013								
Dyspnea	-0.511	-0.568	-0.454	0.600	0.567	0.635	0.146	0.253	0.0	0.000
1.126	1.516	0.033								
ICU	2.088	2.036	2.141	8.070	7.657	8.505	0.068	0.526	0.0	0.000
2.436	14.509	0.413								
Neurological Disease	-0.415	-0.539	-0.291	0.660	0.583	0.747	0.222	0.280	0.0	0.000
0.979	0.967	0.077								
Race White	-0.666	-0.723	-0.609	0.514	0.485	0.544	0.233	0.204	0.0	0.000
0.914	0.729	0.029								
Renal Chronic Disease	-0.062	-0.177	0.052	0.940	0.838	1.053	0.218	0.350	0.0	0.284
1.107	1.340	0.102								
Respiratory Discomfort	-0.011	-0.066	0.045	0.989	0.936	1.046	0.162	0.264	0.0	0.708
1.125	1.489	0.053								
Schooling Superior	-0.548	-0.673	-0.423	0.578	0.510	0.655	0.227	0.168	0.0	0.000
0.887	0.707	0.068								
SpO2 less 95\%	0.038	-0.018	0.095	1.039	0.982	1.099	0.133	0.286	0.0	0.183
1.159	1.762	0.057								
Xray Torax Result Consolidation	0.013	-0.129	0.156	1.014	0.879	1.169	0.221	0.307	0.0	0.853
1.050	1.143	0.135								
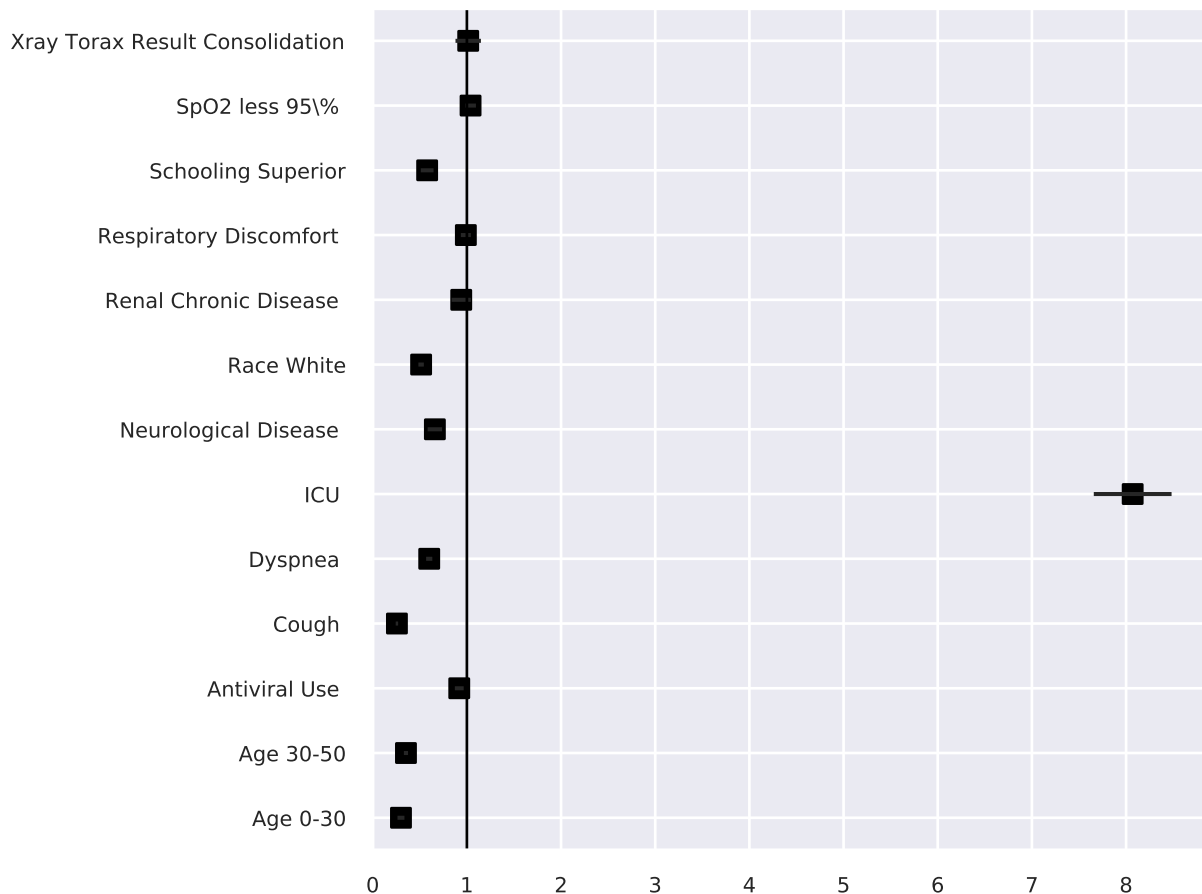
Recursive Feature Elimination:
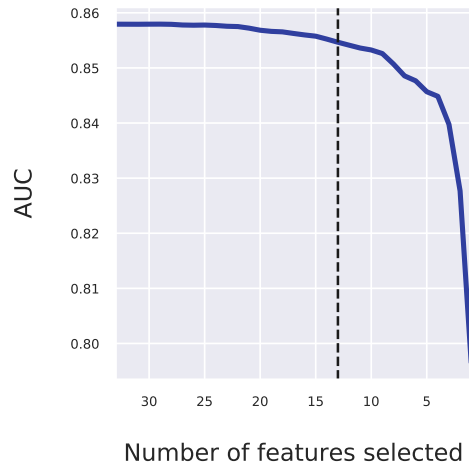
Coefficients:

	SVM-l1	LR-l1
Age 30-50	0.859	0.572
Age 0-30	0.888	0.625
Cough	0.888	0.680
Schooling Superior	0.887	0.707
Race White	0.914	0.729
Neurological Disease	0.979	0.967
Xray Torax Result Consolidation	1.050	1.143
Antiviral Use	1.047	1.158
Renal Chronic Disease	1.107	1.340
Respiratory Discomfort	1.125	1.489
Dyspnea	1.126	1.516
SpO2 less 95\%	1.159	1.762
ICU	2.436	14.509

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.798	0.799	0.799	0.760	0.79
F1w	0.796	0.796	0.796	0.684	0.79
AUC	0.835	0.835	0.835	0.832	0.83