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
Region	0

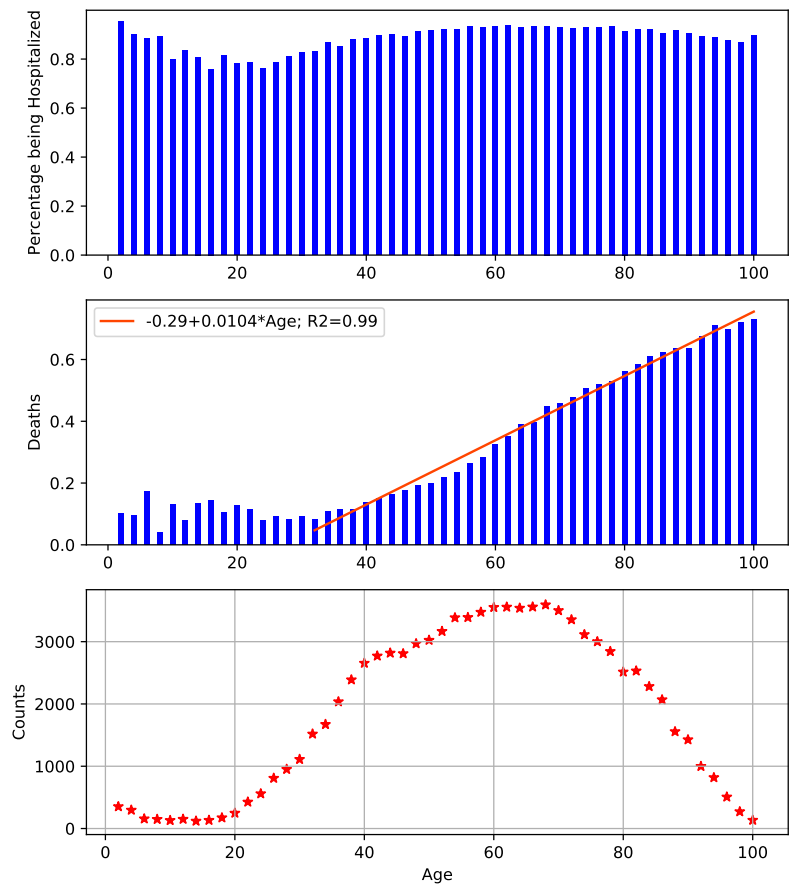**Table 1:** Number of observations with a specific observation

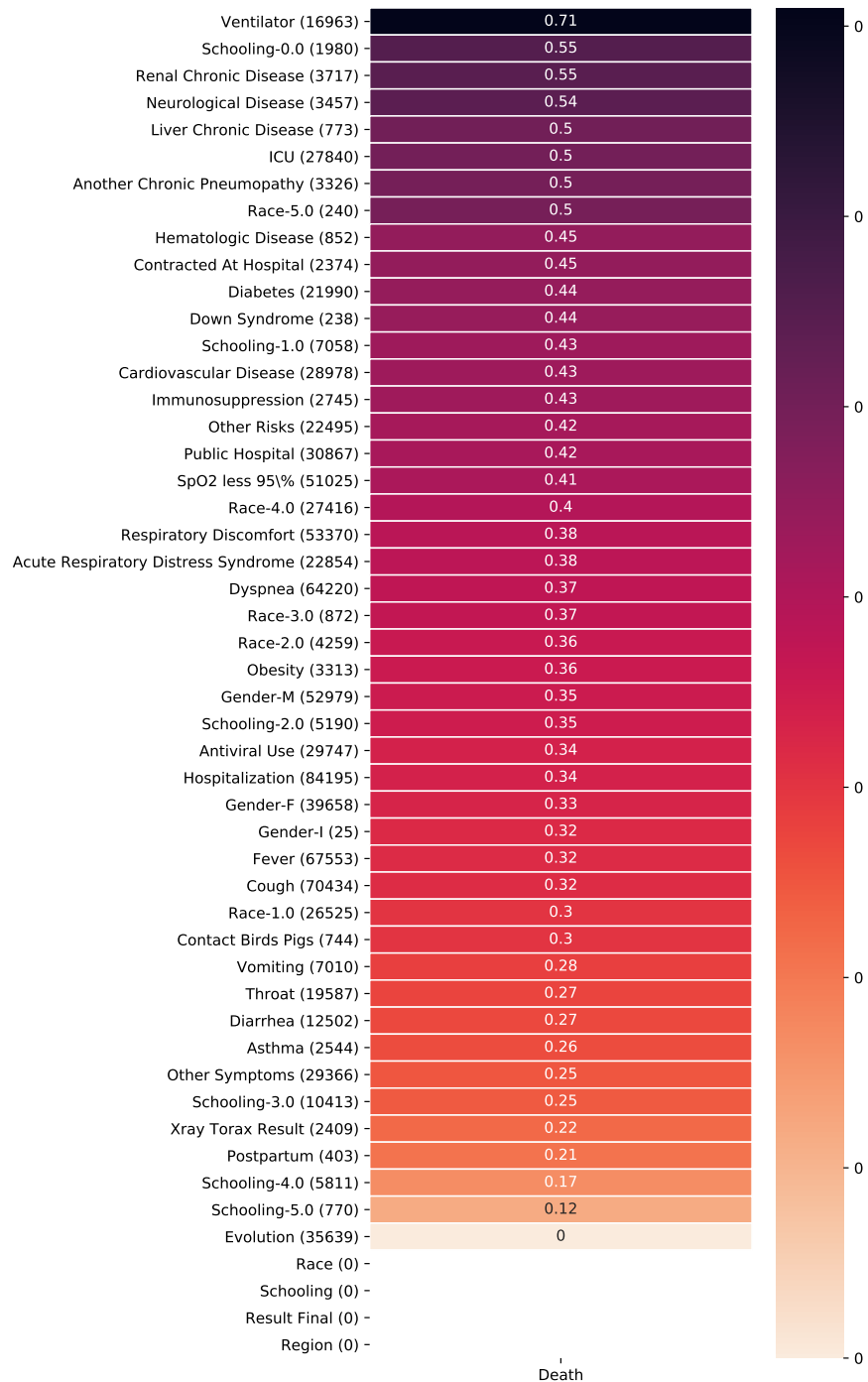**Figure 1:** Distribution of hospitalization and deaths by age group

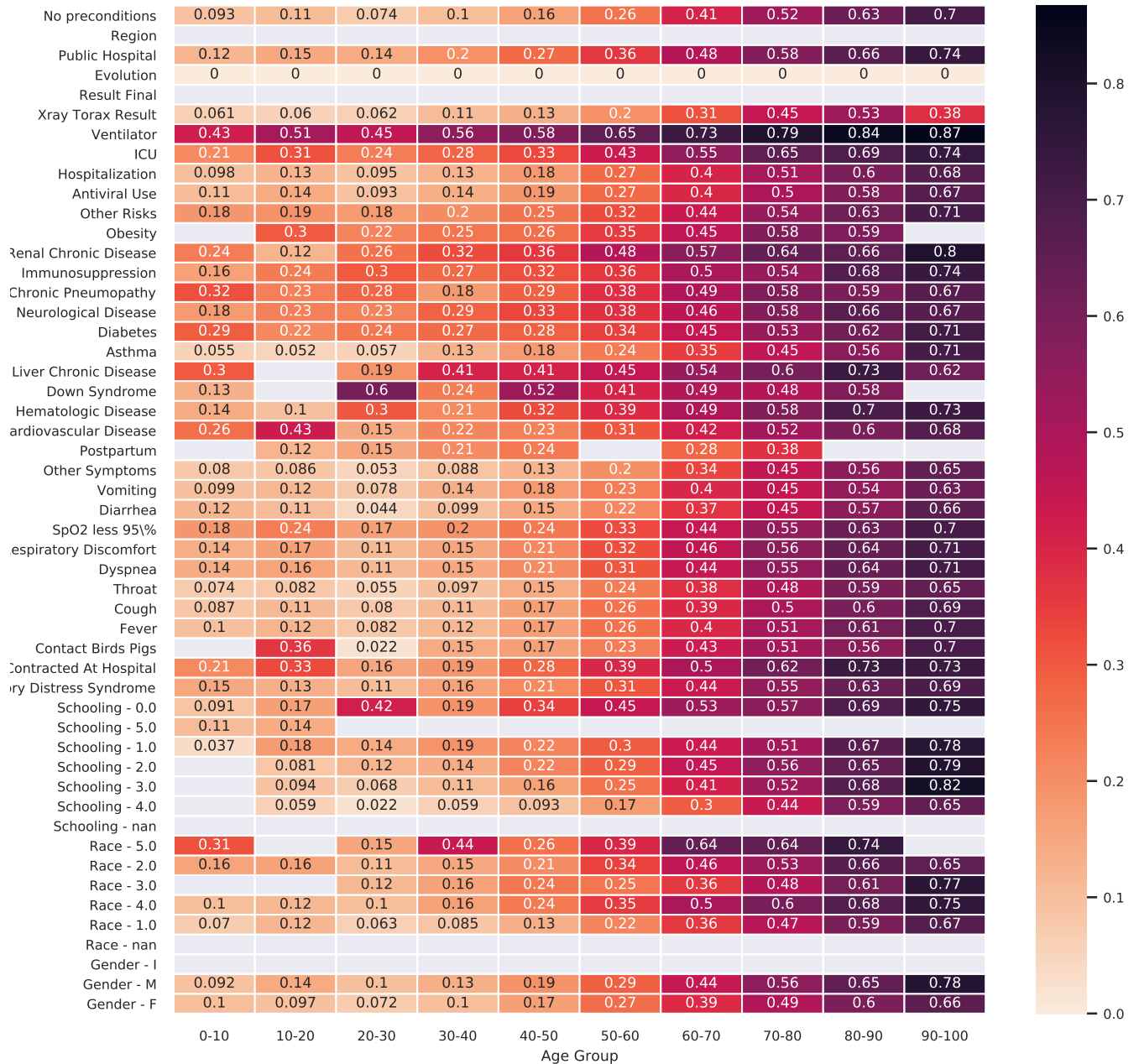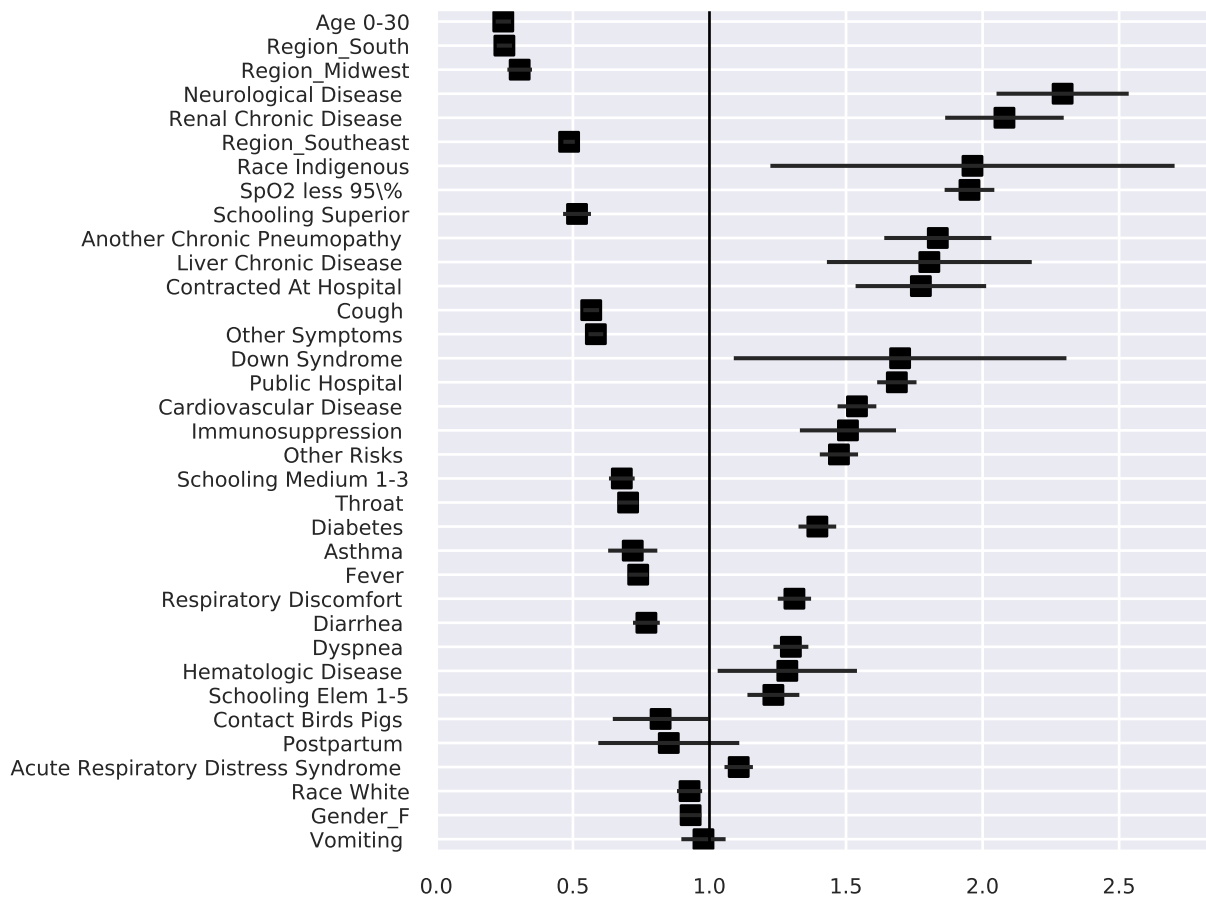**Figure 2:** Share of hospitalized and deaths patients given characteristics

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
Region										
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	SVM-l1 val	Coef LR-l1	LR-l1	2.5 err	err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Age 0-30	0.590	-1.407	0.231	-1.530	0.028	-1.284	0.245	0.217	0.277	0.482	0.149	0.000	0.000
Region_South	0.559	-1.389	0.232	-1.511	0.028	-1.267	0.249	0.221	0.282	0.474	0.237	0.000	0.000
Region_Midwest	0.597	-1.188	0.284	-1.349	0.045	-1.028	0.305	0.260	0.358	0.466	0.311	0.000	0.000
Neurological Disease	1.394	0.830	2.267	0.718	0.242	0.942	2.293	2.051	2.564	0.453	0.690	0.000	0.000
Renal Chronic Disease	1.336	0.732	2.047	0.622	0.217	0.842	2.080	1.863	2.321	0.451	0.704	0.000	0.000
Region_Southeast	0.710	-0.721	0.442	-0.765	0.021	-0.676	0.486	0.465	0.509	0.531	0.415	0.000	0.000
Race Indigenous	1.272	0.674	1.873	0.202	0.740	1.147	1.963	1.223	3.148	0.462	0.663	0.001	0.005
SpO2 less 95\%	1.307	0.669	1.914	0.621	0.091	0.717	1.952	1.861	2.047	0.344	0.544	0.000	0.000
Schooling Superior	0.767	-0.663	0.498	-0.768	0.051	-0.558	0.515	0.464	0.572	0.475	0.253	0.000	0.000
Another Chronic Pneumopathy	1.277	0.607	1.824	0.495	0.196	0.720	1.836	1.640	2.055	0.455	0.650	0.000	0.000
Liver Chronic Disease	1.248	0.590	1.769	0.358	0.375	0.823	1.805	1.430	2.278	0.461	0.654	0.000	0.000
Contracted At Hospital	1.231	0.573	1.709	0.428	0.239	0.718	1.774	1.535	2.051	0.458	0.647	0.000	0.000
Cough	0.765	-0.568	0.518	-0.620	0.029	-0.515	0.567	0.538	0.597	0.580	0.429	0.000	0.000
Other Symptoms	0.786	-0.538	0.553	-0.585	0.027	-0.491	0.584	0.557	0.612	0.511	0.354	0.000	0.000
Down Syndrome	1.199	0.530	1.647	0.085	0.609	0.974	1.698	1.089	2.648	0.462	0.642	0.002	0.019
Public Hospital	1.219	0.522	1.608	0.479	0.072	0.566	1.686	1.614	1.761	0.406	0.557	0.000	0.000
Cardiovascular Disease	1.186	0.432	1.507	0.385	0.071	0.479	1.540	1.469	1.614	0.411	0.565	0.000	0.000
Immunosuppression	1.172	0.410	1.485	0.286	0.176	0.534	1.507	1.331	1.705	0.459	0.579	0.000	0.000
Other Risks	1.156	0.388	1.428	0.339	0.070	0.437	1.474	1.404	1.548	0.436	0.538	0.000	0.000
Schooling Medium 1-3	0.846	-0.387	0.661	-0.460	0.047	-0.315	0.679	0.632	0.730	0.477	0.345	0.000	0.000
Throat	0.866	-0.354	0.703	-0.410	0.038	-0.299	0.702	0.664	0.742	0.483	0.384	0.000	0.000
Diabetes	1.142	0.333	1.371	0.282	0.069	0.383	1.395	1.326	1.467	0.424	0.577	0.000	0.000
Asthma	0.879	-0.330	0.722	-0.464	0.090	-0.196	0.719	0.629	0.822	0.466	0.361	0.000	0.000
Fever	0.853	-0.303	0.680	-0.352	0.036	-0.253	0.739	0.703	0.776	0.554	0.431	0.000	0.000
Respiratory Discomfort	1.105	0.271	1.271	0.223	0.061	0.319	1.311	1.250	1.376	0.391	0.508	0.000	0.000
Diarrhea	0.895	-0.262	0.762	-0.329	0.049	-0.196	0.769	0.720	0.822	0.476	0.374	0.000	0.000
Dyspnea	1.078	0.261	1.206	0.210	0.064	0.311	1.298	1.234	1.365	0.376	0.494	0.000	0.000
Hematologic Disease	1.101	0.251	1.270	0.030	0.255	0.472	1.285	1.030	1.603	0.461	0.583	0.000	0.026
Schooling Elem 1-5	1.084	0.210	1.209	0.130	0.095	0.290	1.234	1.139	1.337	0.454	0.563	0.000	0.000
Contact Birds Pigs	0.920	-0.198	0.816	-0.436	0.175	0.041	0.821	0.646	1.041	0.463	0.391	0.036	0.104
Postpartum	0.917	-0.162	0.829	-0.522	0.258	0.199	0.851	0.593	1.220	0.463	0.306	0.000	0.380
Acute Respiratory Distress Syndrome	1.028	0.102	1.068	0.053	0.052	0.151	1.107	1.055	1.162	0.447	0.507	0.000	0.000
Race White	0.967	-0.076	0.918	-0.127	0.046	-0.025	0.927	0.881	0.975	0.492	0.395	0.000	0.004
Gender_F	0.952	-0.071	0.884	-0.114	0.039	-0.029	0.931	0.892	0.972	0.471	0.451	0.001	0.001
Vomiting	0.987	-0.023	0.975	-0.109	0.081	0.063	0.978	0.897	1.065	0.468	0.396	0.000	0.605

Recursive Feature Elimination:

Number of features selected
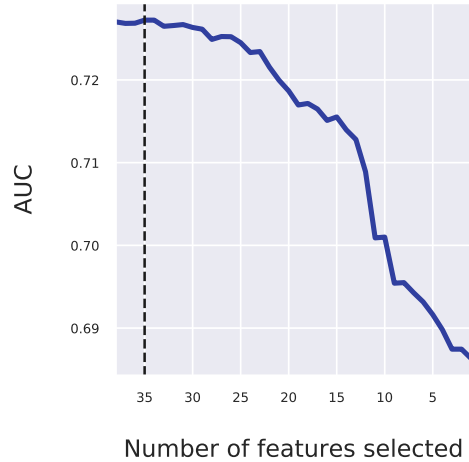
Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.674	0.674	0.673	0.673	0.677
F1w	0.674	0.674	0.673	0.673	0.677
AUC	0.742	0.742	0.742	0.740	0.744
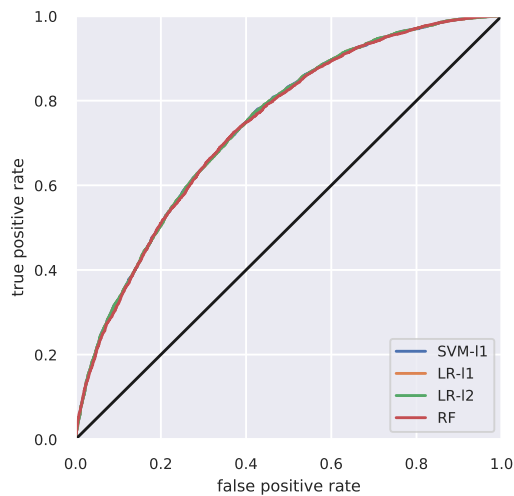
Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.590	0.231
Region_South	0.559	0.232
Region_Midwest	0.597	0.284
Region_Southeast	0.710	0.442
Schooling Superior	0.767	0.498
Cough	0.765	0.518
Other Symptoms	0.786	0.553
Schooling Medium 1-3	0.846	0.661
Fever	0.853	0.680
Throat	0.866	0.703
Asthma	0.879	0.722
Diarrhea	0.895	0.762
Contact Birds Pigs	0.920	0.816
Postpartum	0.917	0.829
Gender_F	0.952	0.884
Race White	0.967	0.918
Vomiting	0.987	0.975
Acute Respiratory Distress Syndrome	1.028	1.068
Dyspnea	1.078	1.206
Schooling Elem 1-5	1.084	1.209
Hematologic Disease	1.101	1.270
Respiratory Discomfort	1.105	1.271
Diabetes	1.142	1.371
Other Risks	1.156	1.428
Immunosuppression	1.172	1.485
Cardiovascular Disease	1.186	1.507
Public Hospital	1.219	1.608
Down Syndrome	1.199	1.647
Contracted At Hospital	1.231	1.709
Liver Chronic Disease	1.248	1.769
Another Chronic Pneumopathy	1.277	1.824
Race Indigenous	1.272	1.873
SpO2 less 95\%	1.307	1.914
Renal Chronic Disease	1.336	2.047
Neurological Disease	1.394	2.267
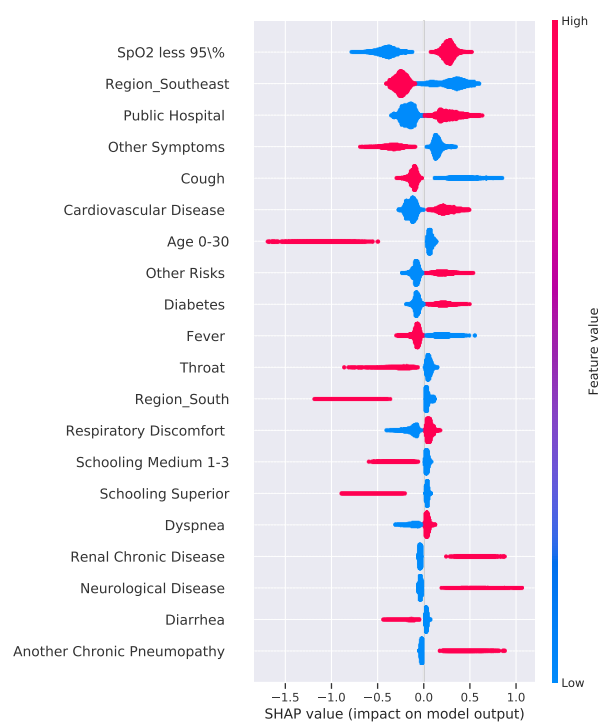
2.2 Mortality (previous) small

SVM-l1 / LR-l1	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Region_Midwest	-1.157	-1.309	-1.006	0.314	0.270	0.366	0.465	0.322	0.000	0.00
	0.645	0.368	0.044							
Schooling Superior	-1.016	-1.114	-0.918	0.362	0.328	0.400	0.475	0.248	0.000	0.00
	0.697	0.408	0.034							
Renal Chronic Disease	0.835	0.731	0.939	2.305	2.076	2.558	0.451	0.690	0.000	0.00
	1.445	2.360	0.229							
Region_Southeast	-0.735	-0.773	-0.698	0.479	0.462	0.498	0.529	0.416	0.000	0.00
	0.784	0.576	0.017							
Schooling Medium 1-3	-0.695	-0.762	-0.628	0.499	0.467	0.534	0.477	0.338	0.000	0.00
	0.770	0.544	0.032							
Other Symptoms	-0.691	-0.734	-0.647	0.501	0.480	0.524	0.509	0.355	0.000	0.00
	0.781	0.564	0.021							
Another Chronic Pneumopathy	0.608	0.502	0.714	1.837	1.653	2.042	0.454	0.644	0.000	0.00
	1.310	1.848	0.184							
SpO2 less 95\%	0.593	0.550	0.635	1.809	1.733	1.887	0.343	0.543	0.000	0.00
	1.358	1.996	0.076							
Contact Birds Pigs	-0.552	-0.776	-0.328	0.576	0.460	0.720	0.463	0.375	0.007	0.00
	0.823	0.660	0.116							
Race Indigenous	0.505	0.048	0.962	1.658	1.050	2.618	0.461	0.688	0.000	0.03
	1.287	1.578	0.608							
Diabetes	0.433	0.386	0.479	1.542	1.471	1.615	0.422	0.577	0.000	0.00
	1.244	1.634	0.071							
Public Hospital	0.404	0.363	0.445	1.498	1.438	1.560	0.404	0.559	0.000	0.00
	1.254	1.664	0.060							
Other Risks	0.310	0.264	0.357	1.364	1.302	1.429	0.436	0.536	0.000	0.00
	1.180	1.458	0.062							
Immunosuppression	0.262	0.146	0.379	1.300	1.158	1.460	0.459	0.560	0.000	0.00
	1.140	1.344	0.142							
Dyspnea	-0.093	-0.134	-0.052	0.911	0.874	0.949	0.373	0.494	0.000	0.00
	1.064	1.155	0.037							
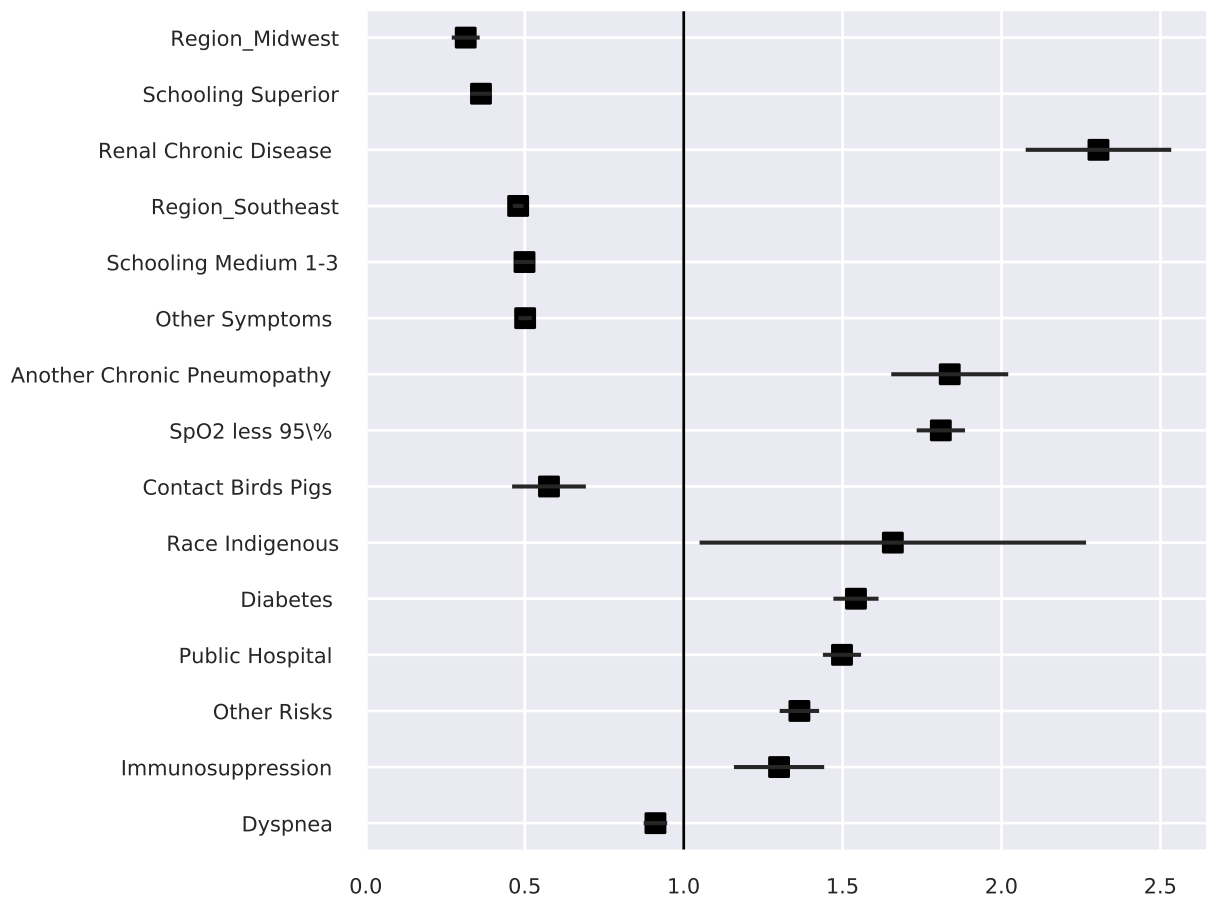
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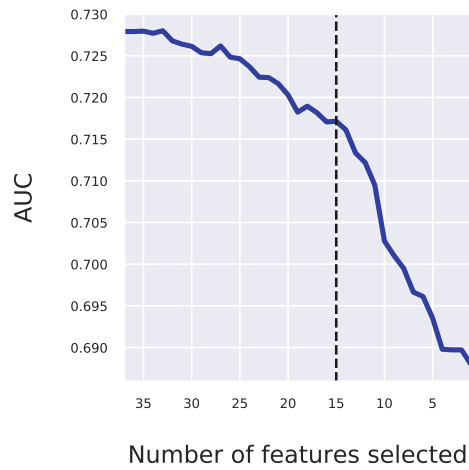
Coefficients:

	SVM-l1	LR-l1
Region_Midwest	0.645	0.368
Schooling Superior	0.697	0.408
Schooling Medium 1-3	0.770	0.544
Other Symptoms	0.781	0.564
Region_Southeast	0.784	0.576
Contact Birds Pigs	0.823	0.660
Dyspnea	1.064	1.155
Immunosuppression	1.140	1.344
Other Risks	1.180	1.458
Race Indigenous	1.287	1.578
Diabetes	1.244	1.634
Public Hospital	1.254	1.664
Another Chronic Pneumopathy	1.310	1.848
SpO2 less 95\%	1.358	1.996
Renal Chronic Disease	1.445	2.360

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.633	0.633	0.633	0.633	0.63
F1w	0.633	0.633	0.633	0.633	0.63
AUC	0.688	0.687	0.687	0.686	0.68

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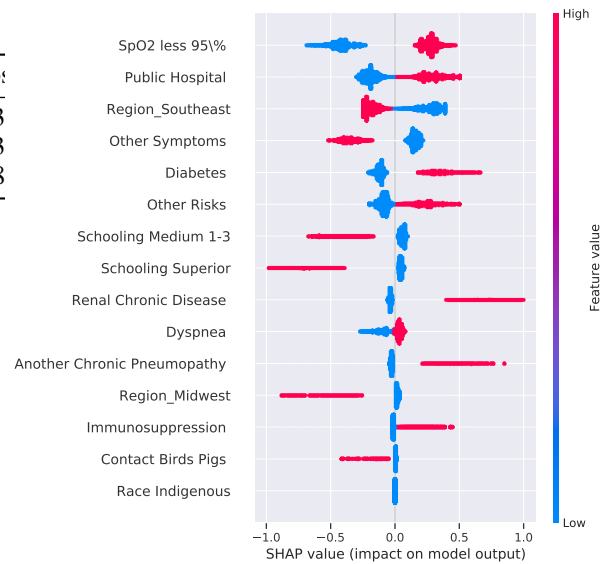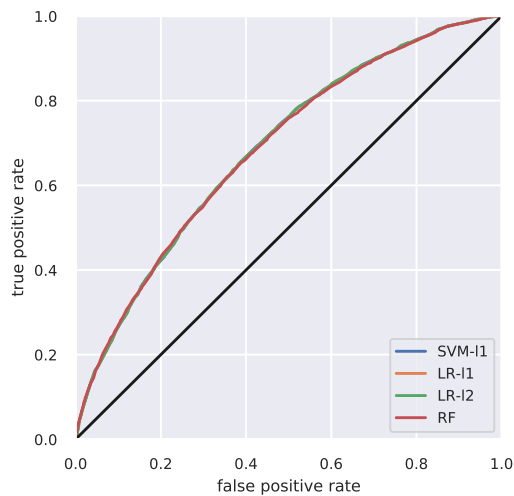
2.3 Mortality (advanced)

Include variables: Antiviral, ICU, Ventilator

	Coef	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
SVM-l1	LR-l1	err								
Ventilator Invasive	2.059	1.984	2.135	7.840	7.270	8.455	0.348	0.860	0.000	0.000
2.100	7.749	0.570								
Age 0-30	-1.917	-2.058	-1.777	0.147	0.128	0.169	0.482	0.149	0.000	0.000
0.517	0.149	0.019								
Region_South	-1.508	-1.650	-1.366	0.221	0.192	0.255	0.474	0.237	0.000	0.000
0.571	0.224	0.029								
Region_Midwest	-1.402	-1.587	-1.216	0.246	0.204	0.296	0.466	0.326	0.000	0.000
0.593	0.266	0.042								
Age 30-50	-1.254	-1.315	-1.193	0.285	0.268	0.303	0.550	0.227	0.000	0.000
0.636	0.277	0.017								
Neurological Disease	0.884	0.763	1.005	2.420	2.144	2.732	0.453	0.710	0.000	0.000
1.404	2.287	0.276								
Race Indigenous	0.777	0.272	1.283	2.175	1.312	3.607	0.463	0.667	0.001	0.003
1.312	1.000	0.863								
Region_Southeast	-0.726	-0.776	-0.676	0.484	0.460	0.509	0.534	0.414	0.000	0.000
0.736	0.455	0.024								
Schooling Superior	-0.665	-0.787	-0.544	0.514	0.455	0.581	0.476	0.252	0.000	0.000
0.796	0.522	0.059								
ICU	0.652	0.593	0.710	1.919	1.810	2.034	0.358	0.665	0.000	0.000
1.260	1.844	0.109								
Public Hospital	0.625	0.576	0.674	1.868	1.778	1.963	0.407	0.557	0.000	0.000
1.239	1.768	0.090								
Down Syndrome	0.574	0.131	1.018	1.776	1.139	2.769	0.463	0.587	0.041	0.011
1.213	1.000	0.637								
Renal Chronic Disease	0.573	0.454	0.693	1.774	1.574	1.999	0.453	0.690	0.000	0.000
1.240	1.695	0.200								
Contracted At Hospital	0.543	0.383	0.703	1.721	1.467	2.019	0.458	0.654	0.000	0.000
1.202	1.546	0.254								
Liver Chronic Disease	0.505	0.247	0.763	1.657	1.280	2.145	0.462	0.651	0.000	0.000
1.197	1.373	0.377								
Other Symptoms	-0.483	-0.536	-0.430	0.617	0.585	0.651	0.509	0.360	0.000	0.000
0.826	0.593	0.032								
SpO2 less 95\%	0.449	0.395	0.502	1.566	1.485	1.652	0.344	0.546	0.000	0.000
1.170	1.533	0.081								
Antiviral Use	-0.398	-0.449	-0.346	0.672	0.638	0.707	0.475	0.443	0.000	0.000
0.864	0.679	0.034								
Cough	-0.390	-0.448	-0.332	0.677	0.639	0.718	0.575	0.431	0.000	0.000
0.838	0.629	0.038								
Immunosuppression	0.352	0.216	0.487	1.422	1.241	1.628	0.460	0.573	0.000	0.000
1.125	1.349	0.181								
Another Chronic Pneumopathy	0.346	0.223	0.468	1.413	1.250	1.597	0.456	0.630	0.000	0.000
1.139	1.341	0.163								
Fever	-0.280	-0.336	-0.225	0.755	0.715	0.799	0.557	0.432	0.000	0.000
0.875	0.705	0.040								
Asthma	-0.247	-0.401	-0.093	0.781	0.669	0.911	0.466	0.366	0.000	0.002
0.920	0.850	0.112								
Hematologic Disease	0.236	-0.009	0.482	1.267	0.991	1.619	0.462	0.591	0.000	0.059
1.077	1.080	0.276								
Schooling Elem 1-5	0.234	0.147	0.321	1.263	1.159	1.378	0.455	0.560	0.000	0.000
1.087	1.205	0.104								
Postpartum	-0.227	-0.644	0.190	0.797	0.525	1.210	0.464	0.294	0.000	0.286
0.912	1.000	0.272								
Respiratory Discomfort	0.222	0.168	0.276	1.249	1.184	1.318	0.392	0.509	0.000	0.000
1.074	1.205	0.065								
Diarrhea	-0.193	-0.267	-0.118	0.825	0.766	0.888	0.476	0.380	0.000	0.000
0.930	0.833	0.059								
Other Risks	0.192	0.137	0.247	1.211	1.147	1.280	0.437	0.538	0.000	0.000
1.058	1.169	0.064								
Schooling Medium 1-3	-0.191	-0.273	-0.109	0.826	0.761	0.897	0.477	0.348	0.000	0.000
0.925	0.822	0.065								
Dyspnea	0.188	0.131	0.245	1.207	1.140	1.278	0.376	0.495	0.000	0.000
1.049	1.120	0.067								
Diabetes	0.187	0.131	0.244	1.206	1.140	1.276	0.423	0.581	0.000	0.000
1.065	1.178	0.066								
Throat	-0.186	-0.248	-0.125	0.830	0.780	0.883	0.484	0.385	0.000	0.000
0.933	0.839	0.050								
Cardiovascular Disease	0.184	0.131	0.237	1.202	1.140	1.267	0.413	0.564	0.000	0.000
1.058	1.169	0.062								
Contact Birds Pigs	-0.127	-0.398	0.144	0.881	0.672	1.154	0.464	0.392	0.039	0.357
0.964	1.000	0.209								
Race White	-0.118	-0.175	-0.060	0.889	0.839	0.942	0.492	0.396	0.000	0.000
0.957	0.879	0.050								
Gender_F	-0.042	-0.089	0.006	0.959	0.915	1.006	0.471	0.452	0.001	0.084
0.968	0.917	0.044								
Acute Respiratory Distress Syndrome	0.036	-0.019	0.090	1.036	0.982	1.094	0.448	0.508	0.000	0.198
0.999	1.000	0.054								

Recursive Feature Elimination:

Number of features selected
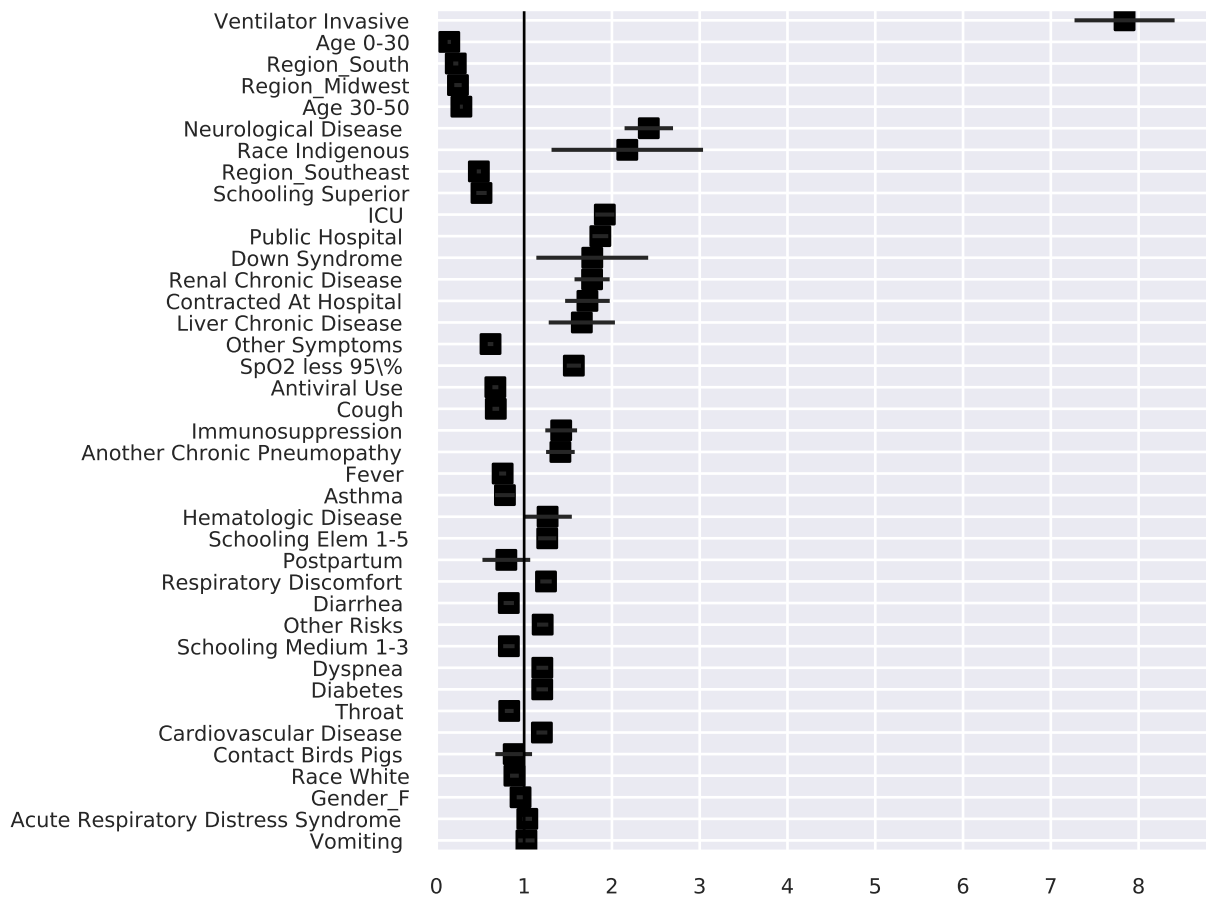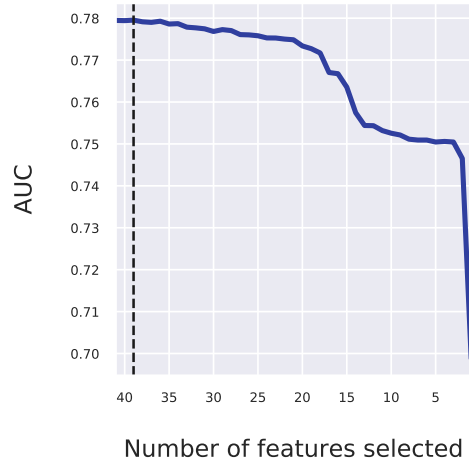
Performance:

|	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.757	0.756	0.757	0.754	0.757
F1w	0.756	0.755	0.757	0.753	0.757
AUC	0.841	0.840	0.841	0.837	0.843
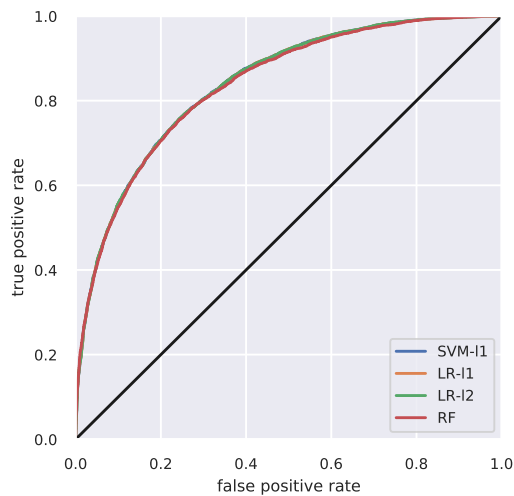
Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.517	0.149
Region_South	0.571	0.224
Region_Midwest	0.593	0.266
Age 30-50	0.636	0.277
Region_Southeast	0.736	0.455
Schooling Superior	0.796	0.522
Other Symptoms	0.826	0.593
Cough	0.838	0.629
Antiviral Use	0.864	0.679
Fever	0.875	0.705
Schooling Medium 1-3	0.925	0.822
Diarrhea	0.930	0.833
Throat	0.933	0.839
Asthma	0.920	0.850
Race White	0.957	0.879
Gender_F	0.968	0.917
Postpartum	0.912	1.000
Race Indigenous	1.312	1.000
Acute Respiratory Distress Syndrome	0.999	1.000
Vomiting	1.007	1.000
Down Syndrome	1.213	1.000
Contact Birds Pigs	0.964	1.000
Hematologic Disease	1.077	1.080
Dyspnea	1.049	1.120
Other Risks	1.058	1.169
Cardiovascular Disease	1.058	1.169
Diabetes	1.065	1.178
Respiratory Discomfort	1.074	1.205
Schooling Elem 1-5	1.087	1.205
Another Chronic Pneumopathy	1.139	1.341
Immunosuppression	1.125	1.349
Liver Chronic Disease	1.197	1.373
SpO2 less 95\%	1.170	1.533
Contracted At Hospital	1.202	1.546
Renal Chronic Disease	1.240	1.695
Public Hospital	1.239	1.768
ICU	1.260	1.844
Neurological Disease	1.404	2.287
Ventilator Invasive	2.100	7.749
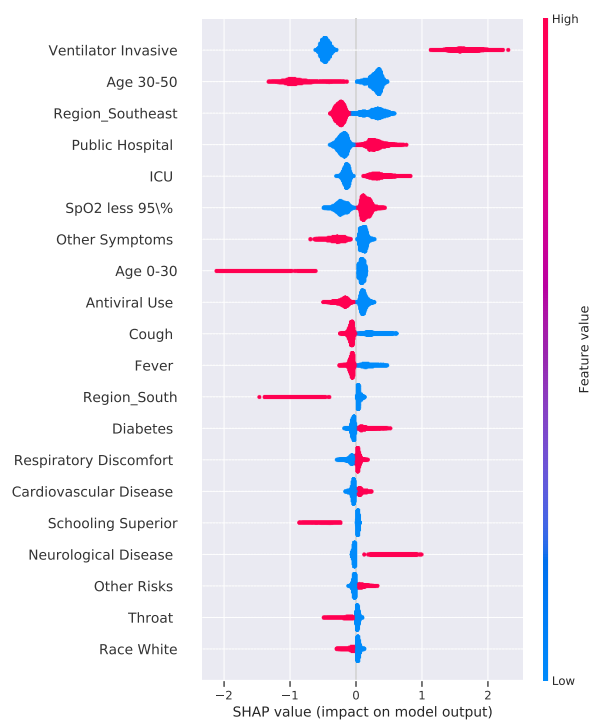
2.4 Mortality (advanced) small

Include variables: Antiviral, ICU, Ventilator

SVM-l1 / LR-l1	Coef	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Ventilator Invasive	2.235	2.161	2.309	9.346	8.678	10.066	0.348	0.861	0.0	0.000
2.330	8.885	0.668								
Age 0-30	-1.999	-2.126	-1.872	0.135	0.119	0.154	0.481	0.149	0.0	0.000
0.587	0.196	0.016								
Region_South	-1.382	-1.504	-1.260	0.251	0.222	0.284	0.474	0.224	0.0	0.000
0.688	0.341	0.029								
Schooling Superior	-1.257	-1.364	-1.150	0.285	0.256	0.317	0.475	0.248	0.0	0.000
0.726	0.409	0.029								
Region_Midwest	-1.174	-1.342	-1.005	0.309	0.261	0.366	0.465	0.321	0.0	0.000
0.692	0.398	0.048								
Race Indigenous	1.009	0.525	1.493	2.743	1.691	4.450	0.462	0.707	0.0	0.000
1.670	1.734	1.052								
Postpartum	-0.891	-1.283	-0.500	0.410	0.277	0.606	0.463	0.269	0.0	0.000
0.784	0.796	0.133								
Neurological Disease	0.873	0.757	0.988	2.393	2.132	2.685	0.453	0.696	0.0	0.000
1.549	2.749	0.261								
Antiviral Use	-0.761	-0.806	-0.717	0.467	0.447	0.488	0.475	0.441	0.0	0.000
0.835	0.629	0.020								
Diarrhea	-0.588	-0.652	-0.525	0.555	0.521	0.592	0.476	0.376	0.0	0.000
0.892	0.750	0.034								
Renal Chronic Disease	0.572	0.460	0.683	1.771	1.584	1.980	0.452	0.688	0.0	0.000
1.317	1.910	0.187								
Liver Chronic Disease	0.423	0.184	0.663	1.527	1.201	1.941	0.461	0.642	0.0	0.001
1.259	1.488	0.326								
Public Hospital	0.244	0.203	0.285	1.276	1.225	1.329	0.405	0.558	0.0	0.000
1.323	2.033	0.051								
ICU	0.200	0.148	0.252	1.221	1.159	1.287	0.358	0.664	0.0	0.000
1.244	1.727	0.062								
Cardiovascular Disease	0.046	0.002	0.090	1.047	1.002	1.094	0.410	0.567	0.0	0.040
1.180	1.517	0.045								
Other Risks	-0.017	-0.065	0.031	0.983	0.937	1.031	0.435	0.540	0.0	0.479
1.122	1.334	0.046								

Recursive Feature Elimination:

AUC vs Number of features selected
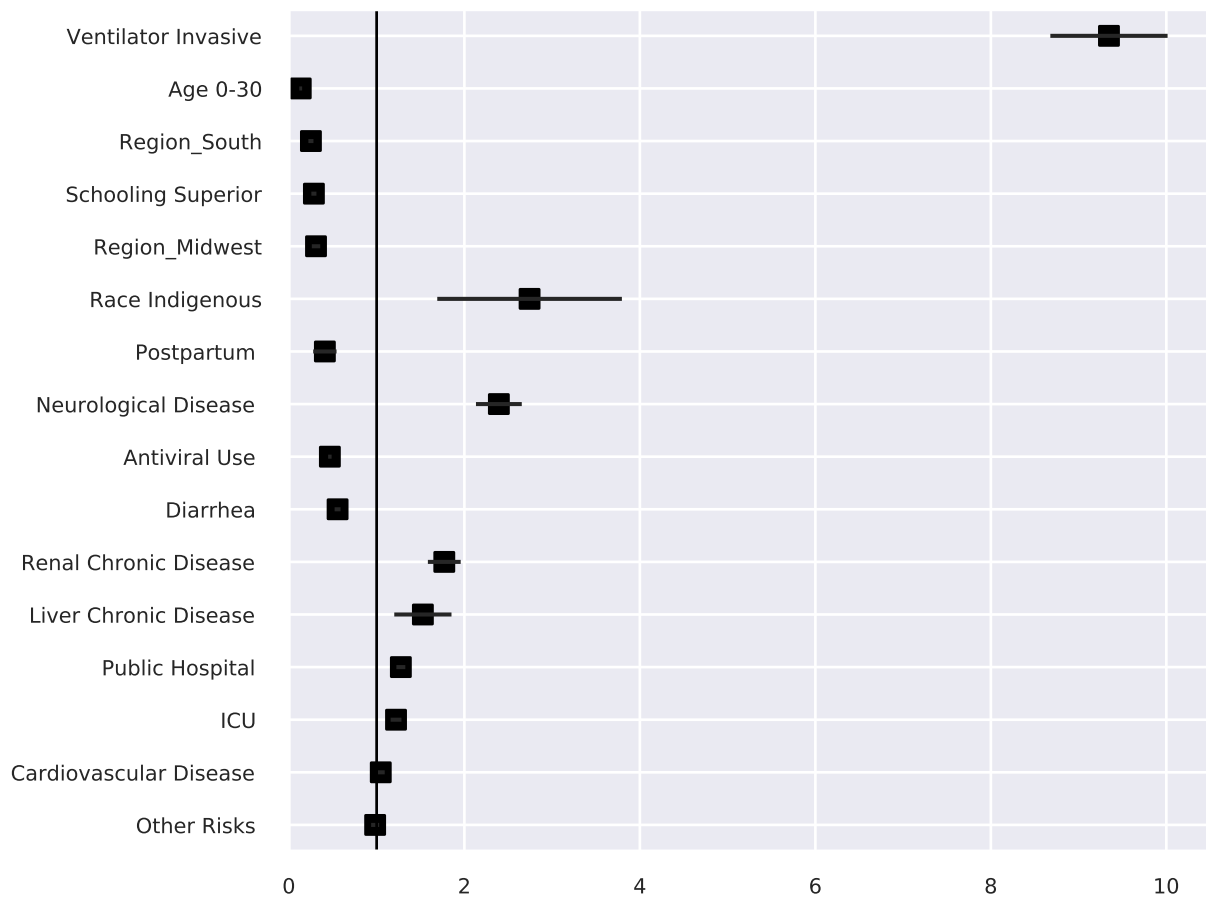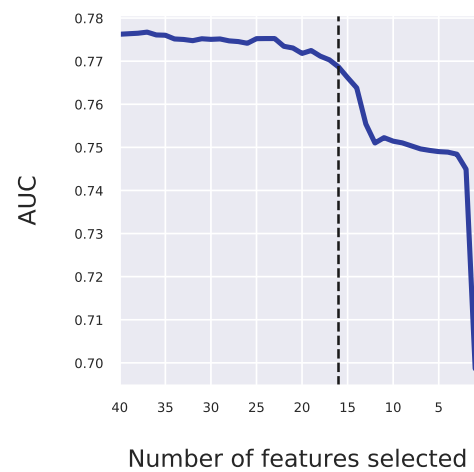
Coefficients:

	SVM-l1	LR-l1
Age 0-30	0.587	0.196
Region_South	0.688	0.341
Region_Midwest	0.692	0.398
Schooling Superior	0.726	0.409
Antiviral Use	0.835	0.629
Diarrhea	0.892	0.750
Postpartum	0.784	0.796
Other Risks	1.122	1.334
Liver Chronic Disease	1.259	1.488
Cardiovascular Disease	1.180	1.517
ICU	1.244	1.727
Race Indigenous	1.670	1.734
Renal Chronic Disease	1.317	1.910
Public Hospital	1.323	2.033
Neurological Disease	1.549	2.749
Ventilator Invasive	2.330	8.885

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.721	0.720	0.720	0.723	0.72
F1w	0.718	0.717	0.717	0.718	0.72
AUC	0.792	0.792	0.792	0.792	0.79
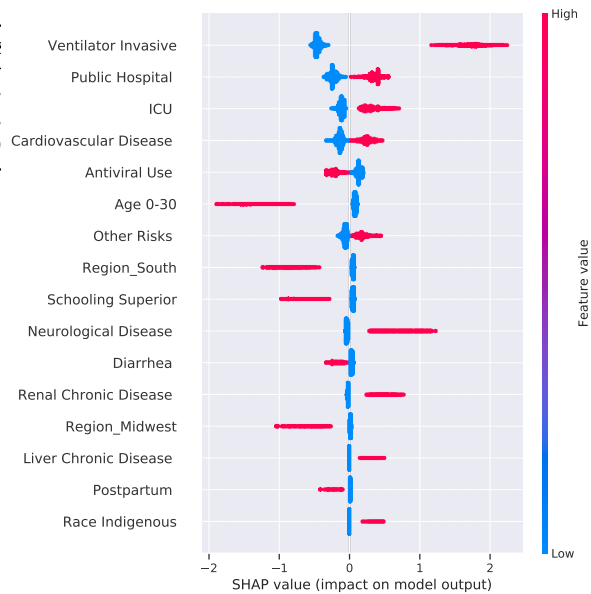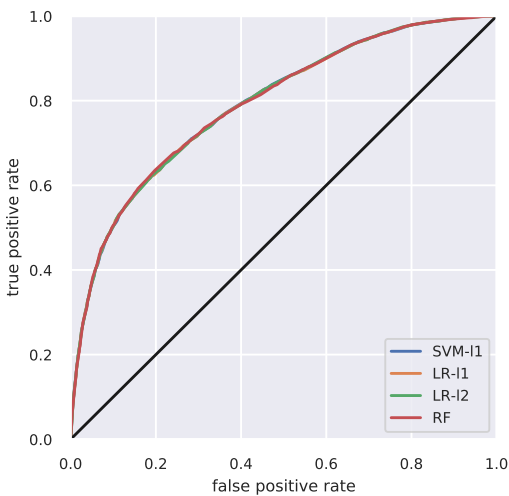
2.5 ICU

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Public Hospital	-0.550	-0.593	-0.506	0.577	0.553	0.603	0.368	0.294	0.000	0.000
0.839	0.657	0.024								
Cough	-0.540	-0.589	-0.491	0.583	0.555	0.612	0.393	0.325	0.000	0.000
0.869	0.722	0.028								
Schooling Elem 1-5	-0.520	-0.603	-0.437	0.595	0.547	0.646	0.346	0.272	0.000	0.000
0.830	0.632	0.048								
SpO2 less 95\%	0.411	0.364	0.457	1.508	1.439	1.580	0.264	0.392	0.000	0.000
1.217	1.606	0.069								
Renal Chronic Disease	0.372	0.275	0.469	1.450	1.316	1.598	0.334	0.482	0.000	0.000
1.206	1.508	0.134								
Xray Torax Result Consolidation	0.346	0.231	0.460	1.413	1.260	1.585	0.337	0.454	0.000	0.000
1.194	1.489	0.153								
Gender_F	-0.337	-0.378	-0.296	0.714	0.685	0.744	0.353	0.323	0.000	0.000
0.927	0.833	0.029								
Throat	-0.332	-0.387	-0.277	0.717	0.679	0.758	0.358	0.275	0.000	0.000
0.872	0.708	0.038								
Schooling Elem 6-9	-0.331	-0.425	-0.238	0.718	0.654	0.789	0.343	0.301	0.001	0.000
0.897	0.766	0.064								
Another Chronic Pneumopathy	0.299	0.196	0.403	1.349	1.216	1.496	0.335	0.462	0.000	0.000
1.155	1.373	0.133								
Antiviral Use	0.295	0.252	0.339	1.343	1.286	1.403	0.311	0.390	0.000	0.000
1.145	1.379	0.057								
Other Risks	0.284	0.238	0.330	1.328	1.268	1.391	0.312	0.419	0.000	0.000
1.184	1.475	0.060								
Schooling Medium 1-3	-0.283	-0.354	-0.213	0.753	0.702	0.808	0.345	0.298	0.000	0.000
0.923	0.821	0.051								
Fever	-0.282	-0.328	-0.236	0.754	0.720	0.790	0.364	0.332	0.000	0.000
0.978	0.951	0.034								
Cardiovascular Disease	0.208	0.163	0.254	1.232	1.177	1.289	0.307	0.407	0.000	0.000
1.125	1.316	0.055								
Contracted At Hospital	0.201	0.074	0.328	1.222	1.076	1.388	0.337	0.444	0.000	0.002
1.148	1.361	0.146								
Diabetes	0.160	0.111	0.209	1.173	1.117	1.232	0.318	0.406	0.000	0.000
1.092	1.225	0.056								
Diarrhea	-0.159	-0.223	-0.095	0.853	0.800	0.910	0.346	0.303	0.000	0.000
0.952	0.886	0.053								
Liver Chronic Disease	0.156	-0.052	0.364	1.169	0.950	1.439	0.339	0.425	0.006	0.141
1.095	1.238	0.219								
Vomiting	-0.153	-0.236	-0.069	0.859	0.789	0.934	0.344	0.297	0.000	0.000
0.954	0.890	0.070								
Immunosuppression	0.128	0.011	0.245	1.136	1.011	1.278	0.338	0.417	0.000	0.032
1.084	1.201	0.125								
Region_Southeast	-0.117	-0.157	-0.077	0.889	0.854	0.926	0.316	0.357	0.000	0.000
1.048	1.122	0.035								
Neurological Disease	0.077	-0.024	0.178	1.080	0.977	1.195	0.337	0.423	0.000	0.133
1.049	1.110	0.103								
Acute Respiratory Distress Syndrome	0.062	0.015	0.109	1.064	1.015	1.115	0.330	0.369	0.000	0.009
1.070	1.174	0.049								
Race White	-0.061	-0.108	-0.013	0.941	0.898	0.987	0.335	0.352	0.012	0.012
0.996	0.990	0.043								
Respiratory Discomfort	0.028	-0.018	0.075	1.029	0.982	1.078	0.306	0.362	0.000	0.228
1.050	1.121	0.047								
Schooling Superior	0.021	-0.069	0.111	1.021	0.933	1.118	0.338	0.370	0.020	0.646
1.065	1.159	0.088								
Dyspnea	-0.004	-0.053	0.044	0.996	0.948	1.045	0.289	0.359	0.000	0.864
1.084	1.217	0.048								
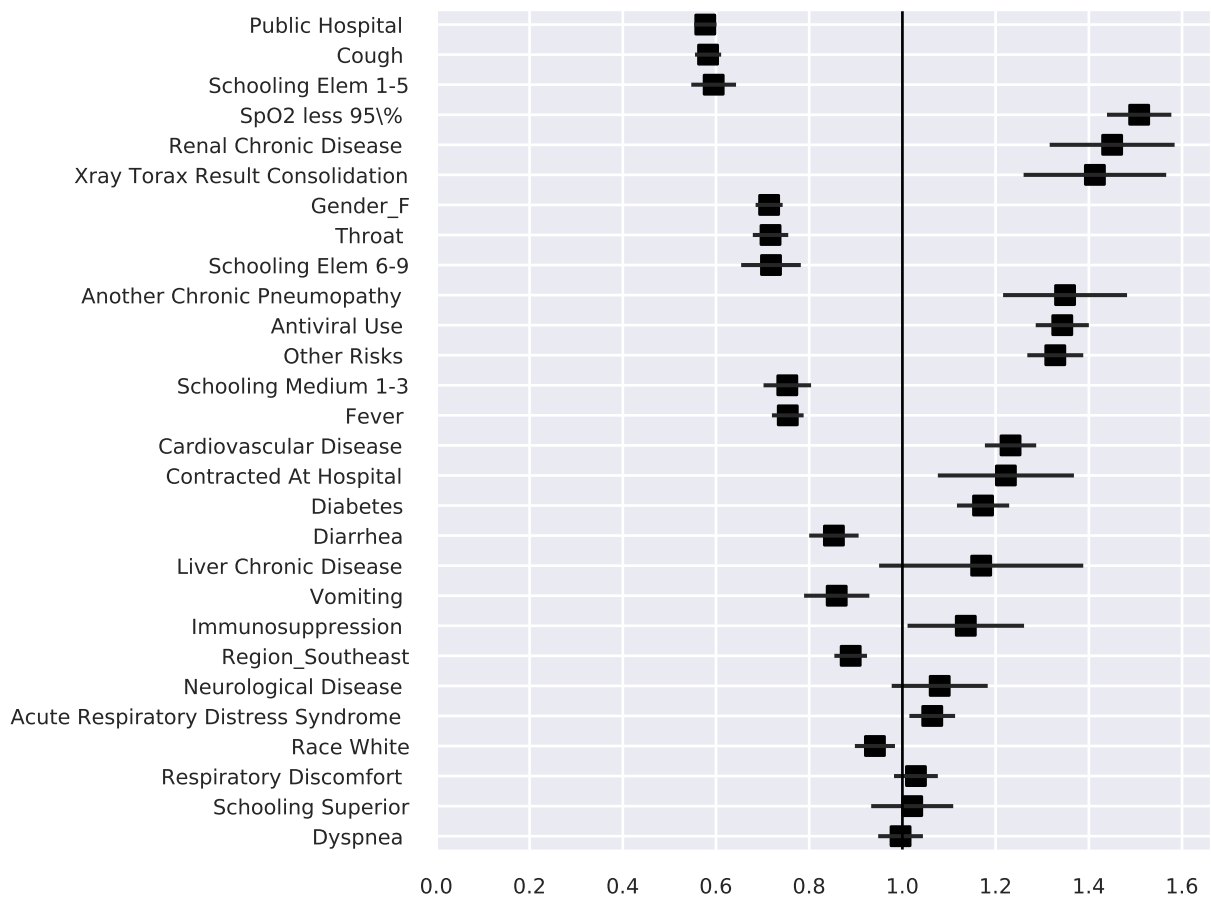
Recursive Feature Elimination:

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.655	0.654	0.654	0.651	0.651
F1w	0.598	0.599	0.599	0.566	0.583
AUC	0.651	0.651	0.651	0.654	0.654
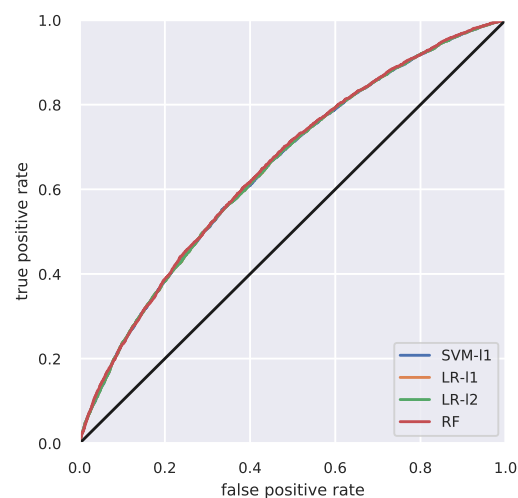
Coefficients:

	SVM-l1	LR-l1
Schooling Elem 1-5	0.830	0.632
Public Hospital	0.839	0.657
Throat	0.872	0.708
Cough	0.869	0.722
Schooling Elem 6-9	0.897	0.766
Schooling Medium 1-3	0.923	0.821
Gender_F	0.927	0.833
Diarrhea	0.952	0.886
Vomiting	0.954	0.890
Fever	0.978	0.951
Race White	0.996	0.990
Neurological Disease	1.049	1.110
Respiratory Discomfort	1.050	1.121
Region_Southeast	1.048	1.122
Schooling Superior	1.065	1.159
Acute Respiratory Distress Syndrome	1.070	1.174
Immunosuppression	1.084	1.201
Dyspnea	1.084	1.217
Diabetes	1.092	1.225
Liver Chronic Disease	1.095	1.238
Cardiovascular Disease	1.125	1.316
Contracted At Hospital	1.148	1.361
Another Chronic Pneumopathy	1.155	1.373
Antiviral Use	1.145	1.379
Other Risks	1.184	1.475
Xray Torax Result Consolidation	1.194	1.489
Renal Chronic Disease	1.206	1.508
SpO2 less 95\%	1.217	1.606

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
Cough	-0.595	-0.640	-0.550	0.552	0.528	0.577	0.396	0.323	0.0	0.000
	0.870	0.730	0.024							
Schooling Elem 1-5	-0.566	-0.646	-0.486	0.568	0.524	0.615	0.346	0.275	0.0	0.000
	0.818	0.619	0.044							
Age 30-50	-0.418	-0.465	-0.370	0.659	0.628	0.691	0.363	0.276	0.0	0.000
	0.899	0.772	0.031							
Schooling Elem 6-9	-0.363	-0.454	-0.271	0.696	0.635	0.763	0.342	0.298	0.0	0.000
	0.887	0.753	0.061							
Renal Chronic Disease	0.345	0.250	0.440	1.412	1.284	1.553	0.333	0.480	0.0	0.000
	1.215	1.513	0.128							
Fever	-0.320	-0.364	-0.276	0.726	0.695	0.759	0.368	0.330	0.0	0.000
	0.972	0.937	0.031							
Antiviral Use	0.256	0.214	0.298	1.292	1.239	1.347	0.312	0.389	0.0	0.000
	1.155	1.391	0.053							
Contracted At Hospital	0.231	0.107	0.355	1.259	1.113	1.426	0.337	0.461	0.0	0.000
	1.188	1.451	0.146							
Another Chronic Pneumopathy	0.231	0.131	0.331	1.260	1.140	1.393	0.335	0.454	0.0	0.000
	1.154	1.357	0.120							
Other Risks	0.228	0.183	0.272	1.256	1.201	1.313	0.313	0.415	0.0	0.000
	1.187	1.467	0.055							
Cardiovascular Disease	0.201	0.158	0.243	1.222	1.172	1.275	0.305	0.408	0.0	0.000
	1.172	1.429	0.050							
Immunosuppression	0.076	-0.038	0.190	1.079	0.963	1.209	0.337	0.412	0.0	0.189
	1.075	1.176	0.116							
Respiratory Discomfort	0.038	-0.002	0.077	1.038	0.998	1.080	0.309	0.359	0.0	0.063
	1.105	1.260	0.040							

Recursive Feature Elimination:

Number of features selected
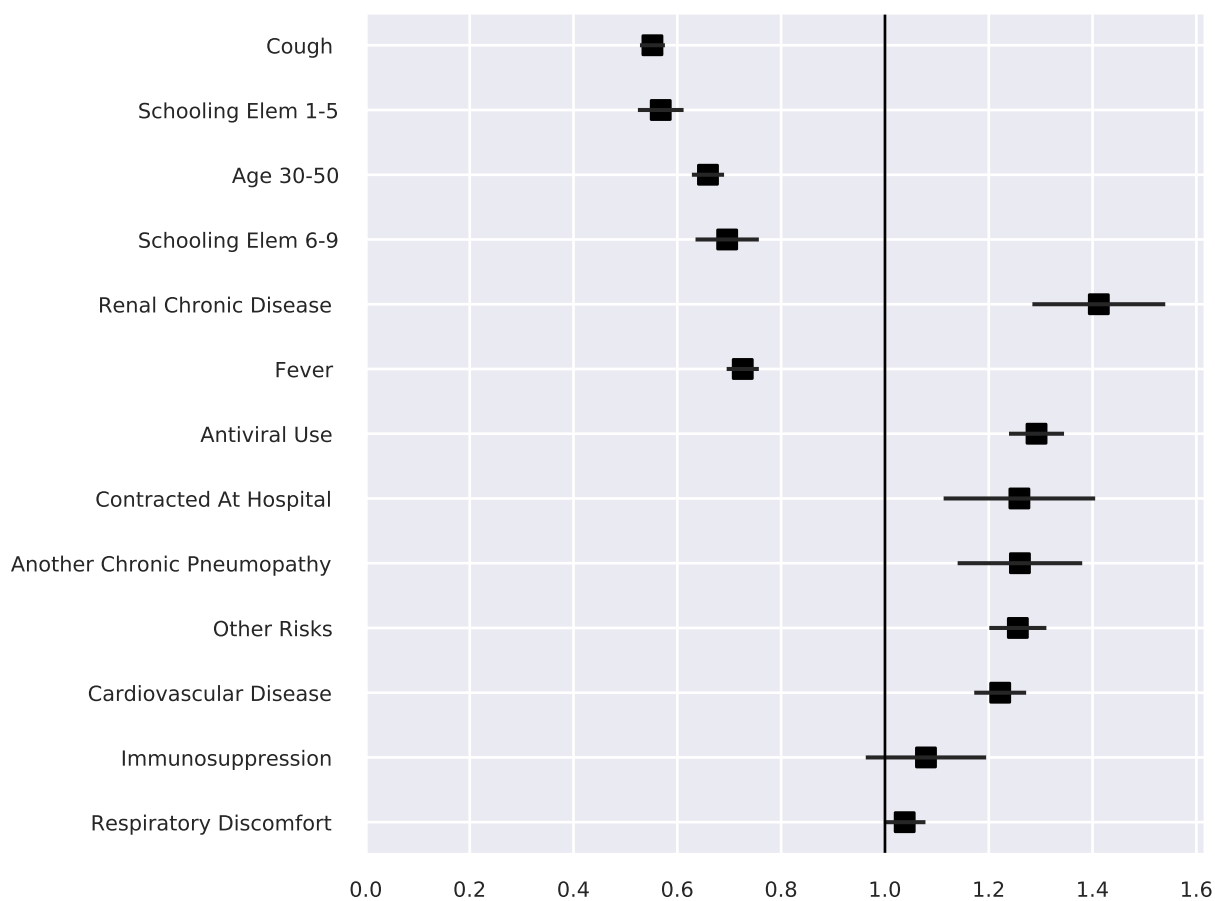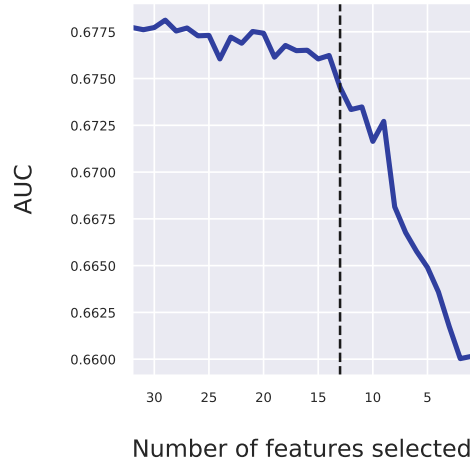
Coefficients:

	SVM-l1	LR-l1
Schooling Elem 1-5	0.818	0.619
Cough	0.870	0.730
Schooling Elem 6-9	0.887	0.753
Age 30-50	0.899	0.772
Fever	0.972	0.937
Immunosuppression	1.075	1.176
Respiratory Discomfort	1.105	1.260
Another Chronic Pneumopathy	1.154	1.357
Antiviral Use	1.155	1.391
Cardiovascular Disease	1.172	1.429
Contracted At Hospital	1.188	1.451
Other Risks	1.187	1.467
Renal Chronic Disease	1.215	1.513

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.641	0.641	0.641	0.638	0.63
F1w	0.559	0.559	0.559	0.528	0.53
AUC	0.608	0.608	0.608	0.605	0.60
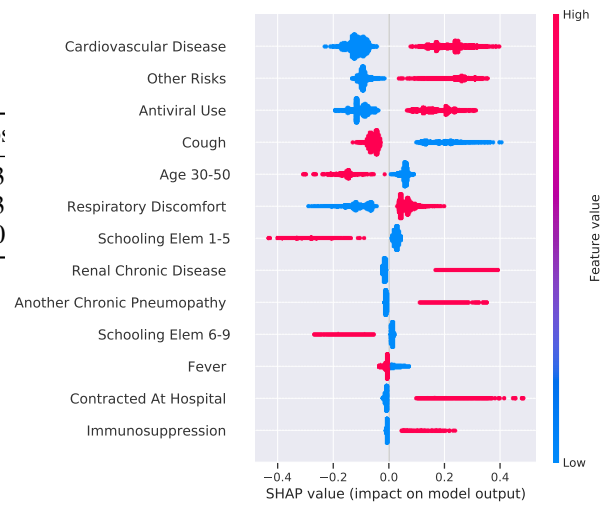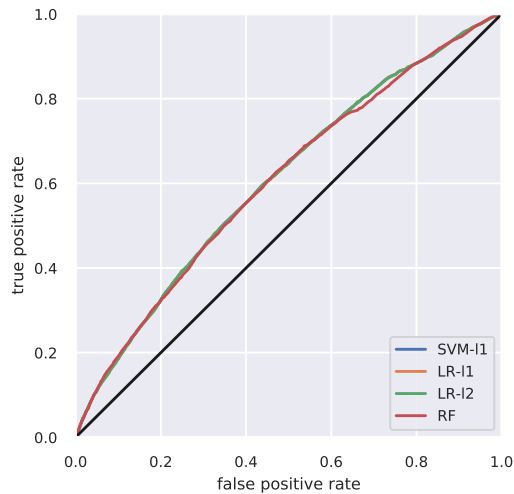
2.7 Ventilator

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Cough	-0.821	-0.873	-0.770	0.440	0.418	0.463	0.273	0.208	0.000	0.000
0.866	0.659	0.022								
Fever	-0.547	-0.597	-0.497	0.579	0.551	0.608	0.251	0.213	0.000	0.000
0.956	0.883	0.028								
SpO2 less 95\%	0.472	0.420	0.524	1.603	1.522	1.688	0.131	0.286	0.000	0.000
1.251	2.088	0.081								
Gender_F	-0.470	-0.516	-0.425	0.625	0.597	0.654	0.231	0.212	0.001	0.000
0.954	0.864	0.028								
Other Symptoms	-0.427	-0.477	-0.376	0.653	0.620	0.687	0.235	0.196	0.000	0.000
0.975	0.924	0.033								
Schooling Superior	-0.321	-0.436	-0.207	0.725	0.646	0.813	0.226	0.167	0.000	0.000
0.956	0.848	0.079								
Race White	-0.318	-0.370	-0.266	0.728	0.691	0.766	0.229	0.208	0.001	0.000
0.963	0.887	0.037								
Schooling Medium 1-3	-0.314	-0.395	-0.233	0.731	0.673	0.793	0.228	0.182	0.000	0.000
0.948	0.841	0.058								
Vomiting	-0.311	-0.410	-0.211	0.733	0.664	0.810	0.227	0.174	0.000	0.000
0.932	0.799	0.069								
Throat	-0.279	-0.342	-0.216	0.757	0.711	0.806	0.234	0.180	0.000	0.000
0.904	0.723	0.046								
Another Chronic Pneumopathy	0.270	0.160	0.379	1.309	1.173	1.461	0.218	0.330	0.000	0.000
1.136	1.373	0.136								
Diarrhea	-0.239	-0.315	-0.162	0.788	0.730	0.850	0.229	0.182	0.000	0.000
0.946	0.836	0.058								
Diabetes	0.223	0.170	0.276	1.249	1.185	1.318	0.199	0.293	0.000	0.000
1.126	1.401	0.064								
Renal Chronic Disease	0.211	0.106	0.315	1.235	1.112	1.371	0.218	0.335	0.000	0.000
1.140	1.390	0.123								
Respiratory Discomfort	0.147	0.096	0.199	1.159	1.100	1.220	0.158	0.264	0.000	0.000
1.128	1.442	0.059								
Cardiovascular Disease	0.114	0.064	0.164	1.121	1.067	1.179	0.193	0.280	0.000	0.000
1.093	1.303	0.054								
Dyspnea	-0.095	-0.148	-0.042	0.909	0.862	0.959	0.145	0.251	0.000	0.000
1.124	1.490	0.047								
Immunosuppression	0.090	-0.038	0.218	1.094	0.963	1.243	0.221	0.283	0.000	0.168
1.089	1.256	0.131								
Contracted At Hospital	0.084	-0.052	0.220	1.088	0.949	1.247	0.220	0.319	0.000	0.225
1.136	1.376	0.139								
Acute Respiratory Distress Syndrome	0.056	0.004	0.108	1.057	1.004	1.114	0.210	0.258	0.000	0.035
1.068	1.217	0.053								
Neurological Disease	-0.036	-0.148	0.077	0.965	0.863	1.080	0.220	0.277	0.000	0.535
1.018	1.044	0.102								

Recursive Feature Elimination:

AUC

Number of features selected

Coefficients:

	SVM-l1	LR-l1
Cough	0.866	0.659
Throat	0.904	0.723
Vomiting	0.932	0.799
Diarrhea	0.946	0.836
Schooling Medium 1-3	0.948	0.841
Schooling Superior	0.956	0.848
Gender_F	0.954	0.864
Fever	0.956	0.883
Race White	0.963	0.887
Other Symptoms	0.975	0.924
Neurological Disease	1.018	1.044
Acute Respiratory Distress Syndrome	1.068	1.217
Immunosuppression	1.089	1.256
Cardiovascular Disease	1.093	1.303
Another Chronic Pneumopathy	1.136	1.373
Contracted At Hospital	1.136	1.376
Renal Chronic Disease	1.140	1.390
Diabetes	1.126	1.401
Respiratory Discomfort	1.128	1.442
Dyspnea	1.124	1.490
SpO2 less 95\%	1.251	2.088

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.746	0.748	0.748	0.747	0.747
F1w	0.658	0.657	0.657	0.639	0.646
AUC	0.671	0.672	0.672	0.668	0.67[1]
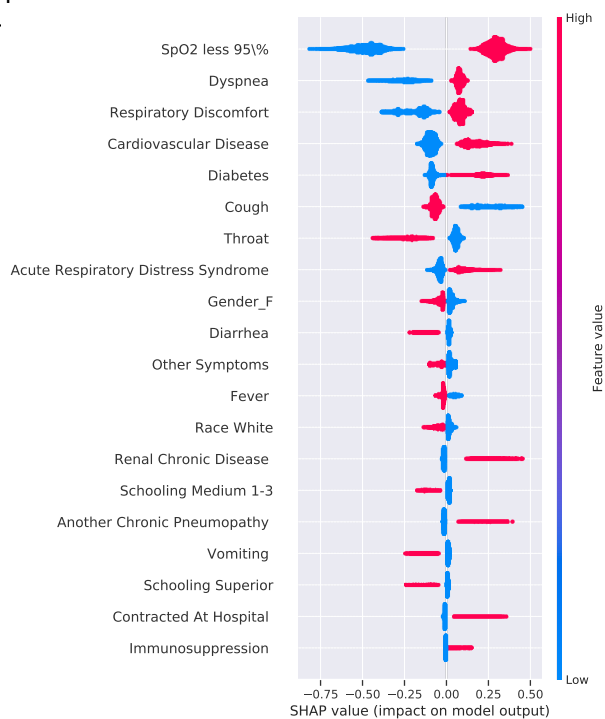
2.8 Ventilator small

SVM-l1 / LR-l1	Coef / err	2.5	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
Cough	-1.095	-1.141	-1.049	0.335	0.320	0.350	0.275	0.208	0.0	0.000
0.833	0.593	0.015								
Gender_F	-0.479	-0.524	-0.434	0.619	0.592	0.648	0.233	0.211	0.0	0.000
0.956	0.874	0.027								
Other Symptoms	-0.476	-0.526	-0.426	0.621	0.591	0.653	0.236	0.196	0.0	0.000
0.977	0.932	0.030								
Schooling Superior	-0.453	-0.567	-0.339	0.636	0.567	0.712	0.227	0.165	0.0	0.000
0.931	0.811	0.069								
SpO2 less 95\%	0.431	0.380	0.482	1.539	1.463	1.620	0.133	0.285	0.0	0.000
1.254	2.075	0.076								
Schooling Medium 1-3	-0.366	-0.447	-0.285	0.694	0.640	0.752	0.228	0.185	0.0	0.000
0.939	0.833	0.054								
Race White	-0.334	-0.386	-0.282	0.716	0.680	0.754	0.231	0.207	0.0	0.000
0.961	0.885	0.036								
Vomiting	-0.326	-0.426	-0.227	0.721	0.653	0.797	0.227	0.175	0.0	0.000
0.929	0.807	0.068								
Diarrhea	-0.297	-0.372	-0.222	0.743	0.689	0.801	0.230	0.184	0.0	0.000
0.939	0.825	0.054								
Cardiovascular Disease	0.181	0.134	0.228	1.199	1.143	1.257	0.194	0.281	0.0	0.000
1.141	1.459	0.056								
Dyspnea	-0.150	-0.202	-0.099	0.860	0.817	0.906	0.145	0.252	0.0	0.000
1.127	1.492	0.043								
Contracted At Hospital	0.094	-0.042	0.229	1.098	0.959	1.258	0.221	0.314	0.0	0.174
1.155	1.393	0.139								
Respiratory Discomfort	0.072	0.021	0.123	1.075	1.022	1.131	0.160	0.264	0.0	0.005
1.113	1.381	0.053								
Acute Respiratory Distress Syndrome	0.024	-0.027	0.076	1.025	0.973	1.079	0.211	0.261	0.0	0.354
1.071	1.216	0.052								

Recursive Feature Elimination:

Number of features selected
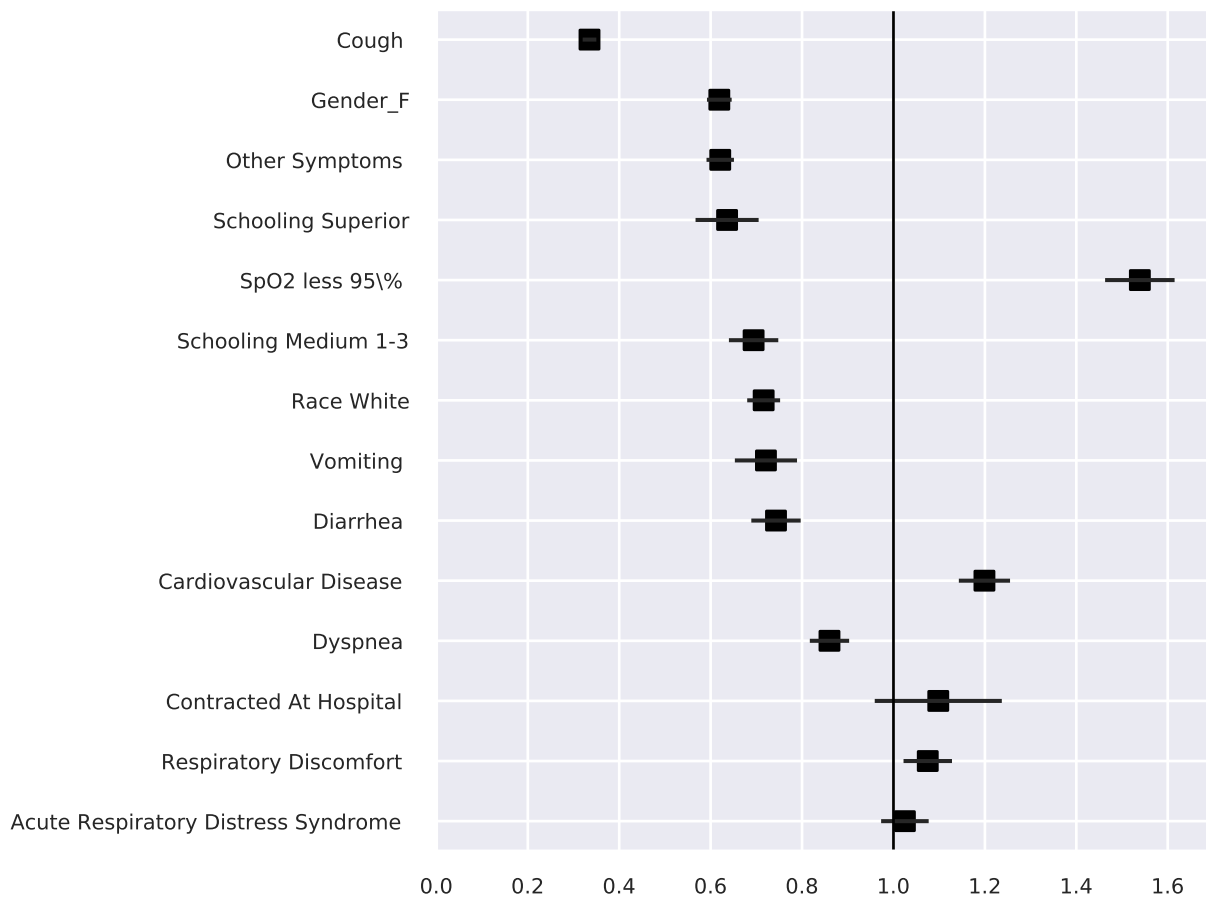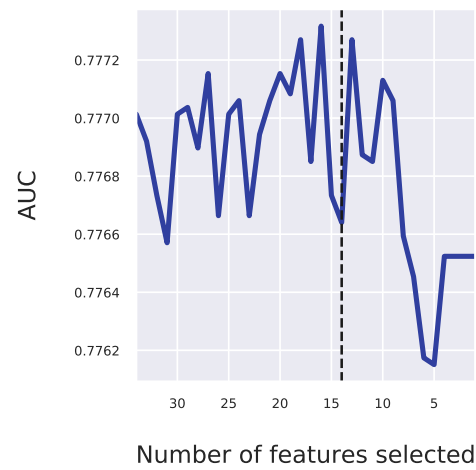
Coefficients:

	SVM-l1	LR-l1
Cough	0.833	0.593
Vomiting	0.929	0.807
Schooling Superior	0.931	0.811
Diarrhea	0.939	0.825
Schooling Medium 1-3	0.939	0.833
Gender_F	0.956	0.874
Race White	0.961	0.885
Other Symptoms	0.977	0.932
Acute Respiratory Distress Syndrome	1.071	1.216
Respiratory Discomfort	1.113	1.381
Contracted At Hospital	1.155	1.393
Cardiovascular Disease	1.141	1.459
Dyspnea	1.127	1.492
SpO2 less 95\%	1.254	2.075

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.751	0.750	0.750	0.750	0.75
F1w	0.656	0.650	0.651	0.643	0.64
AUC	0.663	0.663	0.664	0.659	0.65

40
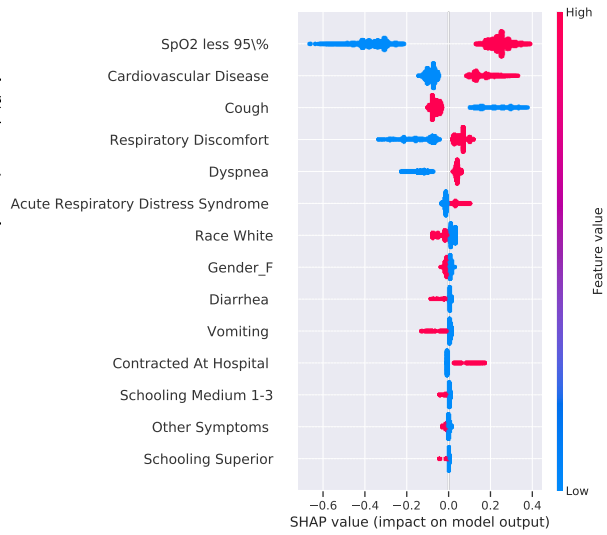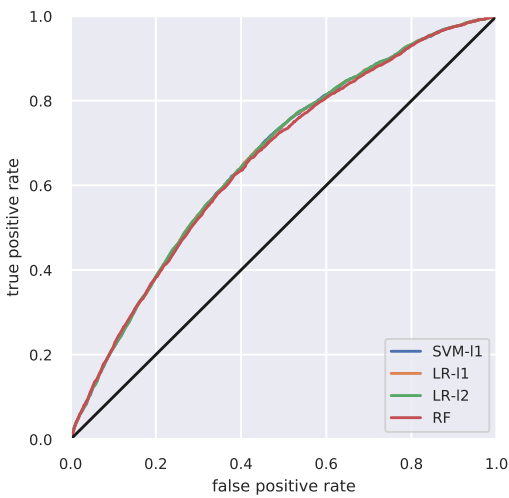
2.9   Ventilator with ICU

SVM-l1	Coef LR-l1	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
ICU	2.709	2.648	2.770	15.019	14.131	15.962	0.066	0.527	0.000	0.000
2.516	16.253	0.888								
BMI 25-30	-2.048	-2.142	-1.954	0.129	0.117	0.142	0.343	0.219	0.000	0.000
0.856	0.670	0.012								
Region_South	-0.778	-0.935	-0.622	0.459	0.393	0.537	0.225	0.167	0.000	0.000
0.836	0.577	0.066								
Age 0-30	-0.707	-0.860	-0.554	0.493	0.423	0.575	0.229	0.120	0.000	0.000
0.878	0.681	0.070								
Region_Southeast	-0.686	-0.747	-0.626	0.503	0.474	0.535	0.247	0.205	0.000	0.000
0.858	0.615	0.029								
Age 30-50	-0.612	-0.693	-0.532	0.542	0.500	0.588	0.251	0.144	0.000	0.000
0.897	0.699	0.042								
Cough	-0.501	-0.568	-0.433	0.606	0.567	0.648	0.276	0.207	0.000	0.000
0.894	0.716	0.039								
SpO2 less 95\%	0.495	0.430	0.560	1.640	1.537	1.751	0.131	0.284	0.000	0.000
1.177	1.768	0.103								
Public Hospital	0.407	0.348	0.466	1.503	1.417	1.593	0.204	0.253	0.000	0.000
1.167	1.692	0.086								
Asthma	-0.394	-0.575	-0.212	0.674	0.562	0.809	0.224	0.179	0.018	0.000
0.899	0.789	0.112								
Schooling Superior	-0.364	-0.497	-0.231	0.695	0.608	0.794	0.226	0.170	0.000	0.000
0.903	0.800	0.087								
Other Symptoms	-0.312	-0.375	-0.249	0.732	0.687	0.779	0.236	0.193	0.000	0.000
0.939	0.832	0.045								
Respiratory Discomfort	0.284	0.220	0.349	1.329	1.246	1.418	0.158	0.264	0.000	0.000
1.122	1.423	0.083								
Fever	-0.283	-0.349	-0.218	0.753	0.706	0.804	0.252	0.213	0.000	0.000
0.957	0.882	0.047								
Xray Torax Result Consolidation	0.252	0.104	0.401	1.287	1.109	1.493	0.219	0.323	0.000	0.001
1.095	1.224	0.178								
Gender_F	-0.226	-0.283	-0.169	0.798	0.754	0.844	0.234	0.207	0.000	0.000
0.964	0.894	0.044								
Renal Chronic Disease	0.205	0.084	0.327	1.228	1.088	1.386	0.217	0.345	0.000	0.001
1.080	1.227	0.140								
Diarrhea	-0.189	-0.279	-0.099	0.828	0.757	0.905	0.229	0.183	0.000	0.000
0.954	0.867	0.071								
Throat	-0.178	-0.253	-0.102	0.837	0.777	0.903	0.234	0.178	0.000	0.000
0.949	0.842	0.060								
Dyspnea	0.172	0.101	0.243	1.188	1.106	1.275	0.144	0.251	0.000	0.000
1.112	1.411	0.082								
Vomiting	-0.147	-0.265	-0.030	0.863	0.768	0.971	0.226	0.178	0.000	0.014
0.963	0.905	0.095								
Schooling Medium 1-3	-0.139	-0.236	-0.042	0.870	0.790	0.959	0.227	0.187	0.000	0.005
0.986	0.958	0.080								
Antiviral Use	0.138	0.080	0.196	1.148	1.083	1.217	0.200	0.262	0.000	0.000
1.053	1.147	0.065								
Diabetes	0.124	0.060	0.188	1.132	1.062	1.207	0.199	0.291	0.000	0.000
1.059	1.208	0.070								
Other Risks	0.103	0.041	0.164	1.108	1.041	1.179	0.202	0.282	0.000	0.001
1.053	1.168	0.067								
Another Chronic Pneumopathy	0.102	-0.026	0.230	1.108	0.975	1.259	0.218	0.327	0.000	0.117
1.040	1.068	0.133								
Race White	-0.101	-0.168	-0.034	0.904	0.845	0.966	0.231	0.204	0.000	0.003
0.977	0.923	0.059								
Contracted At Hospital	0.092	-0.070	0.253	1.096	0.932	1.288	0.220	0.322	0.000	0.266
1.058	1.073	0.164								
Age 65-100	-0.085	-0.151	-0.019	0.919	0.860	0.982	0.182	0.279	0.000	0.012
1.018	1.096	0.059								
Immunosuppression	0.077	-0.076	0.231	1.080	0.926	1.260	0.221	0.277	0.000	0.324
1.039	1.046	0.154								
Liver Chronic Disease	-0.047	-0.313	0.220	0.954	0.731	1.246	0.222	0.292	0.038	0.730
1.001	1.000	0.223								
Acute Respiratory Distress Syndrome	0.044	-0.018	0.107	1.045	0.982	1.113	0.210	0.257	0.000	0.163
1.033	1.117	0.063								
Neurological Disease	-0.037	-0.168	0.095	0.964	0.845	1.099	0.220	0.274	0.000	0.585
0.979	1.000	0.119								
Cardiovascular Disease	-0.015	-0.077	0.047	0.985	0.926	1.048	0.195	0.277	0.000	0.628
1.021	1.054	0.059								

Recursive Feature Elimination:

Coefficients:

	SVM-l1	LR-l1
Region_South	0.836	0.577
Region_Southeast	0.858	0.615
BMI 25-30	0.856	0.670
Age 0-30	0.878	0.681
Age 30-50	0.897	0.699
Cough	0.894	0.716
Asthma	0.899	0.789
Schooling Superior	0.903	0.800
Other Symptoms	0.939	0.832
Throat	0.949	0.842
Diarrhea	0.954	0.867
Fever	0.957	0.882
Gender_F	0.964	0.894
Vomiting	0.963	0.905
Race White	0.977	0.923
Schooling Medium 1-3	0.986	0.958
Liver Chronic Disease	1.001	1.000
Neurological Disease	0.979	1.000
Immunosuppression	1.039	1.046
Cardiovascular Disease	1.021	1.054
Another Chronic Pneumopathy	1.040	1.068
Contracted At Hospital	1.058	1.073
Age 65-100	1.018	1.096
Acute Respiratory Distress Syndrome	1.033	1.117
Antiviral Use	1.053	1.147
Other Risks	1.053	1.168
Diabetes	1.059	1.208
Xray Torax Result Consolidation	1.095	1.224
Renal Chronic Disease	1.080	1.227
Dyspnea	1.112	1.411
Respiratory Discomfort	1.122	1.423
Public Hospital	1.167	1.692
SpO2 less 95\%	1.177	1.768
ICU	2.516	16.253

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoost
Accuracy	0.807	0.806	0.806	0.805	0.809
F1w	0.803	0.801	0.801	0.791	0.805
AUC	0.844	0.845	0.845	0.846	0.847
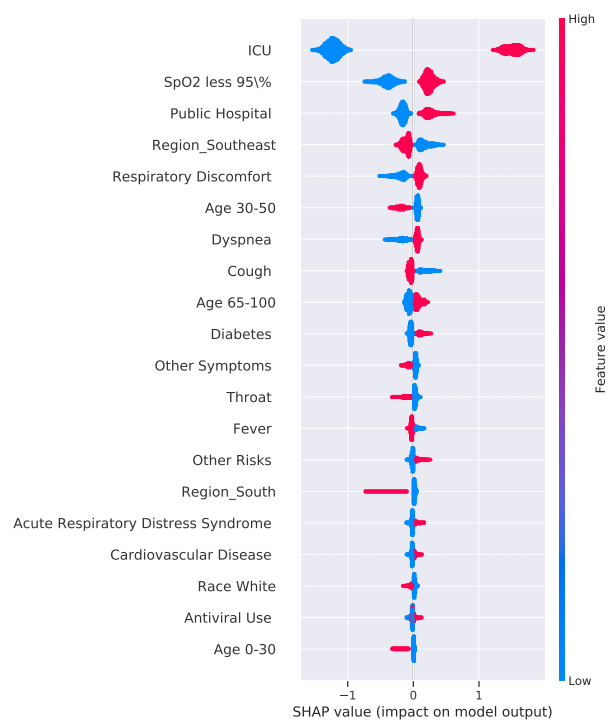
2.10 Ventilator with ICU small

SVM-l1 / LR-l1	Coef	2.5 err	97.5	Odds Ratio	2.5	97.5	Avg-0	Avg-1	KS-pv	pvalue
ICU	2.055	2.004	2.107	7.810	7.417	8.224	0.067	0.528	0.000	0.000
2.448	14.702	0.393								
Cough	-1.458	-1.508	-1.409	0.233	0.221	0.244	0.271	0.211	0.000	0.000
0.915	0.740	0.012								
Race White	-0.667	-0.724	-0.611	0.513	0.485	0.543	0.232	0.208	0.000	0.000
0.939	0.793	0.028								
Dyspnea	-0.544	-0.593	-0.496	0.580	0.553	0.609	0.144	0.255	0.000	0.000
1.208	2.101	0.027								
Throat	-0.337	-0.403	-0.270	0.714	0.668	0.763	0.237	0.178	0.000	0.000
0.964	0.862	0.046								
Region_South	-0.307	-0.439	-0.176	0.735	0.645	0.839	0.227	0.180	0.000	0.000
0.936	0.764	0.090								
Other Risks	-0.293	-0.348	-0.238	0.746	0.706	0.789	0.205	0.282	0.000	0.000
1.054	1.205	0.040								
Contracted At Hospital	-0.291	-0.444	-0.137	0.748	0.641	0.872	0.223	0.315	0.000	0.000
1.074	1.271	0.107								
Immunosuppression	-0.200	-0.344	-0.056	0.819	0.709	0.946	0.223	0.282	0.000	0.006
1.026	1.081	0.110								
Another Chronic Pneumopathy	0.159	0.037	0.281	1.172	1.037	1.324	0.220	0.333	0.000	0.011
1.090	1.334	0.135								
Liver Chronic Disease	-0.094	-0.351	0.163	0.910	0.704	1.177	0.224	0.304	0.013	0.474
1.046	1.188	0.206								
Antiviral Use	-0.071	-0.123	-0.020	0.931	0.884	0.980	0.202	0.265	0.000	0.007
1.063	1.248	0.047								
Xray Torax Result Consolidation	0.037	-0.101	0.174	1.037	0.904	1.190	0.222	0.317	0.000	0.601
1.078	1.275	0.133								
Renal Chronic Disease	0.037	-0.076	0.151	1.038	0.927	1.163	0.219	0.352	0.000	0.518
1.123	1.442	0.111								

Recursive Feature Elimination:

Number of features selected
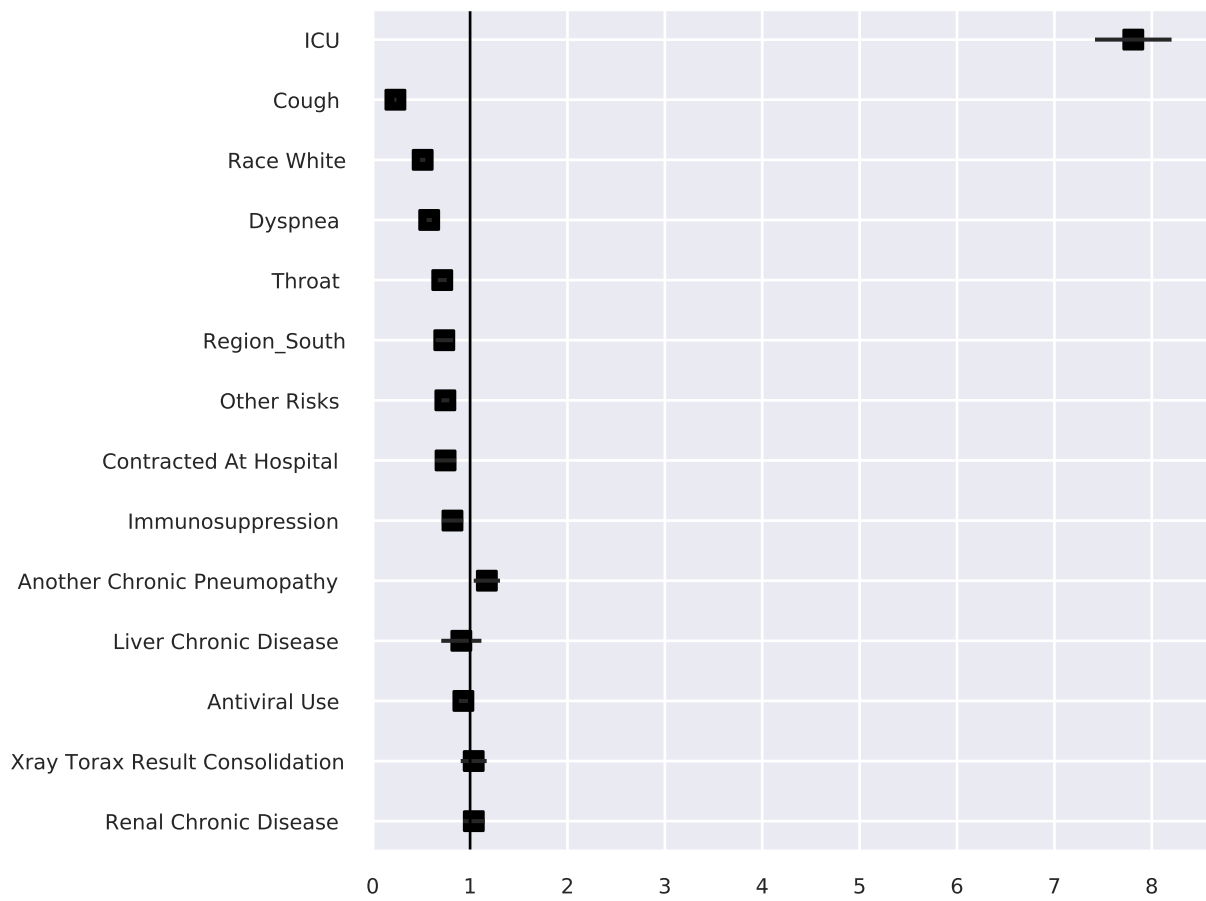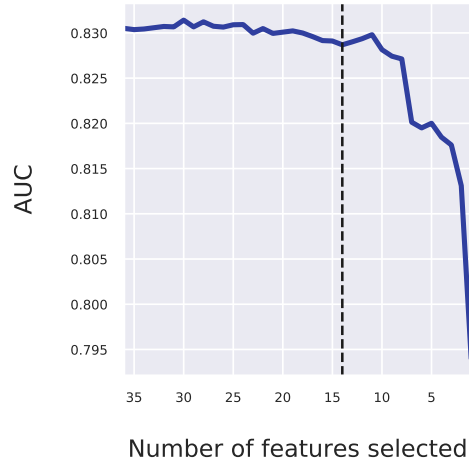
Coefficients:

	SVM-l1	LR-l1
Cough	0.915	0.740
Region_South	0.936	0.764
Race White	0.939	0.793
Throat	0.964	0.862
Immunosuppression	1.026	1.081
Liver Chronic Disease	1.046	1.188
Other Risks	1.054	1.205
Antiviral Use	1.063	1.248
Contracted At Hospital	1.074	1.271
Xray Torax Result Consolidation	1.078	1.275
Another Chronic Pneumopathy	1.090	1.334
Renal Chronic Disease	1.123	1.442
Dyspnea	1.208	2.101
ICU	2.448	14.702

Performance:

	SVM-l1	LR-l1	LR-l2	RF	XGBoos
Accuracy	0.791	0.792	0.792	0.789	0.78
F1w	0.792	0.792	0.792	0.783	0.79
AUC	0.819	0.819	0.819	0.817	0.82