Supplementary Table 2. Survival Analysis Utilizing Hours from Admission to Intubation

		Model 1 Unadjusted 512/755			Model 2[a] Partially Adjusted 482/690			Model 3[a] Fully Adjusted 383/552		
Parameter		**Hazard Ratio**	**95% CI**		**Hazard Ratio**	**95% CI**		**Hazard Ratio**	**95% CI**	
Time to Intubation	**Per hour**	1.000	1.000	1.001	1.001	1.001	1.002	1.001	1.001	1.002
Duration of Mechanical Ventilation	**>3, ≤7 days**	4.105	2.975	5.664	3.013	2.154	4.213	3.312	2.215	4.952
(Reference: 0-3 days)	**>7, ≤14 days**	2.522	1.894	3.357	1.898	1.410	2.553	2.029	1.425	2.890
	>14, ≤21 days	1.233	0.899	1.690	0.901	0.639	1.270	0.964	0.651	1.427
	>21, ≤28 days	0.779	0.521	1.167	0.473	0.301	0.744	0.605	0.366	0.997
	>28, ≤60 days	0.321	0.215	0.479	0.231	0.139	0.384	0.206	0.117	0.361
	>2 months	0.042	0.017	0.107	0.058	0.021	0.164	0.068	0.024	0.197
Tracheostomy		0.719	0.514	1.006	0.703	0.464	1.064	0.788	0.501	1.241
Discharged Status	**Yes**	0.007	0.002	0.021	0.005	0.001	0.020	0.005	0.001	0.022
Calendar Week of the Intubation Onset					1.226	1.154	1.302	1.250	1.153	1.355
Age	**45 - 64**				2.166	1.339	3.503	1.440	0.844	2.458
	65+				3.115	1.921	5.051	2.103	1.234	3.583
BMI	**Overweight**				1.352	1.022	1.789	1.433	1.039	1.979
	Obese				1.320	1.020	1.709	1.157	0.855	1.566
Race and Ethnicity[b]	**Asian**				0.651	0.409	1.036	0.534	0.306	0.932
	Black				1.051	0.792	1.396	0.914	0.653	1.279
	Hispanic				0.850	0.637	1.135	0.758	0.544	1.057
	Other				1.337	0.994	1.797	1.417	1.000	2.007
Gender	**Female**				0.850	0.693	1.042	0.918	0.723	1.167
Hypertension					0.944	0.750	1.187	0.964	0.741	1.255
Diabetes					0.927	0.724	1.186	0.901	0.684	1.186
Liver Disease					0.741	0.357	1.540	0.761	0.323	1.793
Asthma or COPD					1.104	0.802	1.520	1.102	0.765	1.589
CHF or Valve Disorder					1.577	1.050	2.369	1.392	0.867	2.233
Anticoagulation[c]					0.391	0.311	0.493	0.360	0.272	0.477
Broad Spectrum Antibiotic[c]					0.727	0.560	0.945	0.730	0.542	0.983
Antiplatelet Agent[c]					0.927	0.742	1.159	0.959	0.747	1.231
Steroids[c]					0.750	0.585	0.962	0.589	0.438	0.793
Max Heart Rate[c]	**Per minute**							1.010	1.005	1.014
Max O_2 Saturation[c]	**Per %**							0.975	0.959	0.991
Max Respiratory Rate[c]	**Per minute**							0.995	0.979	1.011
Max Creatinine[c]	**Maximum**							1.025	0.993	1.058
Last Respiratory Device[b,c,d]	**CPAP/BiPAP**							0.933	0.579	1.504
	HFNC							0.919	0.539	1.567
	Mask							1.055	0.663	1.679

Parameter		Model 1 Unadjusted 512/755			Model 2[a] Partially Adjusted 482/690			Model 3[a] Fully Adjusted 383/552		
		Hazard Ratio	95% CI		Hazard Ratio	95% CI		Hazard Ratio	95% CI	
	Nasal cannula							0.574	0.307	1.072
	Unknown							0.618	0.370	1.032

BMI = Body Mass Index (kg/m^2), Overweight = BMI 25-30kg/m^2, Obese = BMI >30kg/m^2, COPD = Chronic Obstructive Pulmonary Disease, CHF = Congestive Heart Failure, CPAP = Continuous Positive Airway Pressure, BiPAP = Bilevel Positive Airway Pressure, HFNC = High Flow Nasal Cannula

[a] For covariates-adjusted models, baseline survival distribution are allowed to be different for different hospitals.

[b] Overall p-value is <.01

[c] Prior to Intubation

[d] Reference: Room Air