

Supplemental Digital Content 2. Distribution of time periods for model training, validation, 2009-2016 test sample, and 2017-2018 independent cohort, and number of patients with at least one routine time period or ICU time period.

Model	Patient Class	Training	Validation	Test Sample 2009-2016	2017-2018 Cohort	Total Time Periods or Patients
Time Periods						
>6 -12 Hours	Routine	502,674	62,865	218,364	2,533,826	3,317,729
	ICU	257,467	31,781	109,478	356,920	755,646
	All	760,141	94,646	327,842	2,890,746	4,073,375
>12 - 18 Hours	Routine	512,383	64,057	222,517	2,460,770	3,259,727
	ICU	248,783	30,696	105,745	353,544	738,768
	All	761,166	94,753	328,262	2,814,314	3,998,495
>18 – 24 Hours	Routine	522,121	65,251	226,713	2,387,180	3,201,265
	ICU	239,792	29,580	101,889	349,609	720,870
	All	761,913	94,831	328,602	2,736,789	3,922,135
>24 - 30 Hours	Routine	531,655	66,430	230,850	2,317,275	3,146,210
	ICU	231,023	28,497	98,077	345,229	702,826
	All	762,678	94,927	328,927	2,662,504	3,849,036
All	Routine	512,915	64,141	222,799	2,532,017	3,331,872
	ICU	260,081	32,093	110,580	358,729	761,483
	All	772,996	96,234	333,379	2,890,746	4,093,355
Patients						
>6 -12 Hours	Routine	24,929	3,078	10,882	76,079	114,968
	ICU	11,992	1,469	5,157	5,490	24,108
	All	25,713	3,177	11,235	78,950	119,075
>12 - 18 Hours	Routine	25,091	3,095	10,958	73,962	113,106
	ICU	11,439	1,406	4,923	5,411	23,179
	All	25,721	3,178	11,240	77,295	117,434
>18 – 24 Hours	Routine	25,199	3,111	10,999	69,941	109,250
	ICU	10,780	1,324	4,661	5,264	22,029
	All	25,722	3,178	11,237	73,712	113,849
>24 - 30 Hours	Routine	25,283	3,119	11,039	65,975	105,416
	ICU	10,221	1,262	4,415	5,155	21,053
	All	25,723	3,179	11,240	69,748	109,890
All	Routine	25,099	3,095	10,961	74,906	114,061
	ICU	11,992	1,469	5,157	5,431	24,049
	All	25,725	3,179	11,240	78,950	119,094

