

**Supplementary Table 2.** Comparison of performance in the prediction of deterioration events at the same specificity

Cutoff	Sensitivity	Specificity	PLR	NLR	PPV	NPV	F-1score	MACPD	NNE	NRI
pDEWS $\geq 6.3$	0.973	0.353	1.505	0.076	0.010	1.000	0.019	1,771	103.485	0.008
Modified PEWS $\geq 1$	0.887	0.353	1.371	0.321	0.009	0.998	0.017	1,769	113.479	-
LR $\geq 7.0$	0.911	0.354	1.411	0.250	0.009	0.998	0.018	1,768	110.314	-0.006
RF $\geq 35.1$	0.945	0.354	1.463	0.156	0.009	0.999	0.019	1,769	106.450	-0.004
pDEWS $\geq 18.9$	0.887	0.714	3.098	0.158	0.020	0.999	0.039	792	50.784	0.006
Modified PEWS $\geq 2$	0.703	0.714	2.458	0.416	0.016	0.997	0.031	788	63.761	-
LR $\geq 40.4$	0.746	0.714	2.606	0.356	0.017	0.998	0.033	789	60.189	-0.001
RF $\geq 51.6$	0.790	0.714	2.763	0.294	0.018	0.998	0.034	789	56.829	-0.000
pDEWS $\geq 41.1$	0.703	0.900	7.022	0.330	0.044	0.998	0.082	283	22.968	0.014
Modified PEWS $S \geq 3$	0.485	0.900	4.877	0.571	0.031	0.996	0.058	278	32.632	-
LR $\geq 66.8$	0.504	0.900	5.022	0.552	0.032	0.996	0.059	281	31.716	0.000
RF $\geq 64.4$	0.534	0.900	5.320	0.518	0.033	0.997	0.063	281	29.996	0.002
pDEWS $\geq 69.3$	0.459	0.972	16.127	0.557	0.095	0.996	0.157	85	10.565	0.041
Modified PEWS $\geq 4$	0.269	0.972	9.458	0.752	0.058	0.995	0.095	81	17.308	-
LR $\geq 93.8$	0.287	0.972	10.252	0.734	0.062	0.995	0.102	80	16.046	0.004
RF $\geq 74.5$	0.263	0.972	9.534	0.758	0.058	0.995	0.095	79	17.179	0.001
pDEWS $\geq 83.9$	0.221	0.993	29.933	0.784	0.163	0.995	0.187	23	6.153	0.090
Modified PEWS $\geq 5$	0.114	0.993	17.074	0.892	0.100	0.994	0.106	20	10.034	-
LR $\geq 99.4$	0.147	0.993	20.368	0.859	0.117	0.994	0.130	22	8.573	0.024
RF $\geq 82.6$	0.094	0.993	13.408	0.913	0.080	0.994	0.086	20	12.504	-0.016
pDEWS $\geq 92.2$	0.067	0.999	45.214	0.934	0.227	0.994	0.103	5	4.412	0.147
Modified PEWS $\geq 6$	0.029	0.999	21.276	0.973	0.121	0.994	0.046	4	8.250	-
LR $\geq 99.9$	0.037	0.999	44.608	0.964	0.224	0.994	0.064	2	4.458	0.028
RF $\geq 89.0$	0.026	0.999	19.326	0.976	0.111	0.994	0.042	4	8.982	-0.009

PLR: positive likelihood ratio; NLR: negative likelihood ratio; PPV: positive predictive value; NPV: negative predictive value; MACPD: mean alarm count per day; NNE: number needed to examine; NRI: net reclassification index; pDEWS: deep-machine-learning-based pediatric early warning system; PEWS: pediatric early warning score; LR: logistic regression; RF: random forest.