Sensors - Supplementary Material

Discrepancies Between Promised and Actual AI Capabilities in the Continuous Vital Sign Monitoring of In-Hospital Patients: A Review of the Current Evidence

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Supplemental Table S1. Alarm modification within the Visi Mobile System

Parameter	Delay (seconds)	Threshold (high/low)	Alarms/patient/day
Visi Mobile default alarms			
SpO_2	60	OFF / 85%	2.32
Heart rate	5	150 / 30	0.67
Respiratory rate	120	35 / 4	0.29
Continous blood pressure	SYS: 120 MAP: 90	SYS: 190/OFF MAP: OFF/60	1.23
Total			**4.51**
Visi Mobile alarm optimization in case study			
SpO_2	*90*	OFF / 85%	*1.14*
Heart rate	*5*	150 / 30	*1.27*
Respiratory rate	*120*	35 / 4	*0.38*
Continous blood pressure	SYS: 240 MAP: 60	SYS: 200/OFF MAP: OFF/58	*0.49*
Total			***3.29***

Supplemental Table S2. Algorithms used in the National Early Warning Score and the new multi-parameter real-time warning score

The NEWS							
Parameter	3	2	1	0	1	2	3
Respiratory rate (BrPM)	≤8		9-11*	12-20*		21-24*	≥25*
Oxygen saturation (%)	≤91	92-93	94-95	≥96			
Supplemental oxygen		yes		No			
Temperature (°C)	≤35		35.1-36	36.1-38	38.1-39	≥39.1	
Systolic bloodpressure (mmHg)	≤90	91-100	101-110	111-219			≥220
Heart rate (BPM)	≤40		41-50	51-90	91-110	111-130	≥131
Level of consciousness				A			V, P, U
A multi-parameter real-time warning score							
Parameter	3	2	1	0	1	2	3
Respiratory rate (BrPM)	≤8		9-11	12-20	21-24	25-30	≥30
Oxygen saturation (%)	≤91	92-93	94-95	≥96			
Temperature (°C)	≤35		35.1-36	36.1-38	38.1-39	39.1-40	≥40.1
Systolic blood pressure (mmHg)	≤90		91-100	101-140	141-180	181-200	≥221
Diastolic blood pressure (mmHg)	≤40	41-60		61-90		91-110	≥111
Heart rate (BPM)	≤40		41-50	51-90	91-110	111-149	≥150
Stroke volume (mL)	≤50		51-60	61-100	101-120		≥121
Cardiac output (L/minute)	≤2.5		2.6-4.0	4.1-8.0	8.1-12.0		≥12.1
Systemic vascular resistance (dynes*sec*cm^{-5})	≤600	601-800		801-1200	1201-1800	1801-2000	≥2001
Escalation for a multi-parameter real-time warning score							
Low	Up to one parameter deviating for 10 consecutive minutes (two consecutive measurements) with a score of 2						
Medium	Two parameters deviating simultaneously for 10 consecutive minutes (two consecutive measurements) both with a score of 2						
High	Three parameters or more deviating simultaneously for 10 consecutive minutes (two consecutive measurements) all with a score of 2						
Urgent	At least one parameter with a score of 3 for over 10 consecutive minutes (two consecutive measurements)						

*Numbers not provided in study