

Online Data Supplement

Dynamic and Personalized Risk Forecast in Step-Down Units: Implications for Monitoring Paradigms

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Table E1

List of features used in the Random Forest classifier trained to estimate the instantaneous risk of CRI. “Y” indicates that a feature is computed for the corresponding vital sign (in columns) and statistics (in rows). Due to the sparseness of the blood pressure measurements, only the applicable features are computed from the corresponding measurements.

Vital Signs	HR	RR	SpO ₂	SysBP	MeanBP	DiaBP
	Statistics					
Mean	Y	Y	Y	Y	Y	Y
Slope	Y	Y	Y	Y	Y	Y
Last Value	Y	Y	Y			
Standard deviation	Y	Y	Y			
Mean of values within last 80% of window size	Y	Y	Y			
Mean of values within last 50% of window size	Y	Y	Y			
Slope of values within last 50% of window size	Y	Y	Y			
Power from FFT	Y	Y	Y			
Slope of autocorrelation function	Y	Y	Y			
Sample entropy	Y	Y	Y			
Approximate entropy	Y	Y	Y			
Data density/duty cycle	Y	Y	Y			

Abbreviations: HR, heart rate; RR, respiratory rate; SpO₂, pulse oximetry; SysBP, systolic blood pressure; MeanBP, mean blood pressure, DiaBP, diastolic blood pressure.

Figure E1 Legend

Overall trend of cases vs. controls discrimination over time measured on the validation set using the Random Forest model derived from the training set. Left: Areas Under the Receiver Operating Characteristic (ROC) Curves (AUCs) during 4-hour stable period. Right: AUCs during the 4 hours immediately preceding CRI events. Time index 0 denotes the time of SDU admission (left) or CRI onset time (right).

