Supplemental Digital Content 3: Examples of $SctO_2$ sequences in the first 12 hours of PICU stay.

Examples of $SctO_2$ sequences in the first 12 hours of PICU stay, see Fig. 1. For each signal, it is indicated the average loss of IQ points that is associated with the signal desaturation.
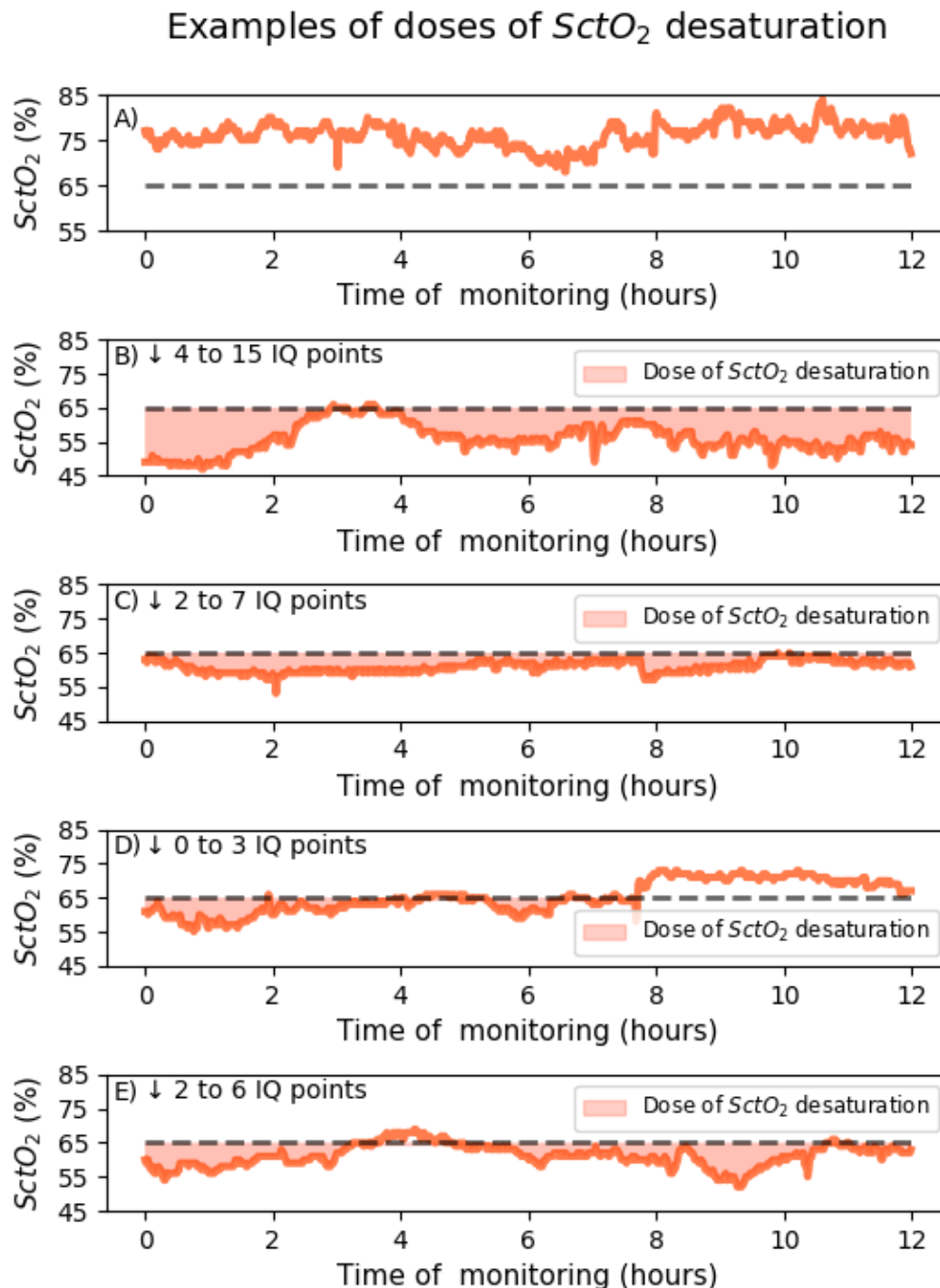

Figure 1 Sequences of $SctO_2$ recordings with different doses of desaturation, first 12 hours of monitoring time. The desaturation dose below 65% (unit of measurement: %·minutes) is represented by the red area

between the signal and the grey dashed line which indicates the 65% desaturation threshold. Signal A) desaturation dose: 0%·minutes. Signal B) desaturation dose: 917 %·minutes. Signal C) desaturation dose: 413 %·minutes. Signal D) desaturation dose: 189 %·minutes. Signal E) desaturation dose: 409 %·minutes. For each signal, the average drop of IQ points associated with its $SctO_2$ desaturation is indicated in respect with signal A), which shows no desaturation. For example, the desaturation dose of signal B) is associated with a loss of 4 to 15 IQ points than signal A). Similarly, the desaturation dose of signal C) is associated with a loss of 2 to 7 IQ points than signal A).