

ADDITIONAL FILE 2

Day-to-day progression of vital-sign circadian rhythms in the intensive care unit

Shaun Davidson^{1*}, Mauricio Villarroel¹, Mirae Harford^{1,2}, Eoin Finnegan¹, João Jorge¹, Duncan Young², Peter Watkinson² and Lionel Tarassenko¹

*Correspondence:

shaun.davidson@eng.ox.ac.uk

¹Institute of Biomedical

Engineering, Department of Engineering Science, University of Oxford, Oxford, UK

Full list of author information is available at the end of the article

Number of Measurements and ICU stays

Fig. 1 shows the number of ICU stays in the SRV, DCS, and combined cohorts that exceeded a given LOS in days. It is worth noting the number of patients in the SRV and DCS cohorts beyond a LOS of about 4 is more similar, especially for MIMIC-III and eICU-CRD, than the number of patients in each cohort without any restriction on LOS. This effect is significantly less pronounced in PICRAM, where at no given LOS does the DCS cohort become larger than the SRV cohort (i.e. at no LOS is a patient still in ICU more likely to die than recover).

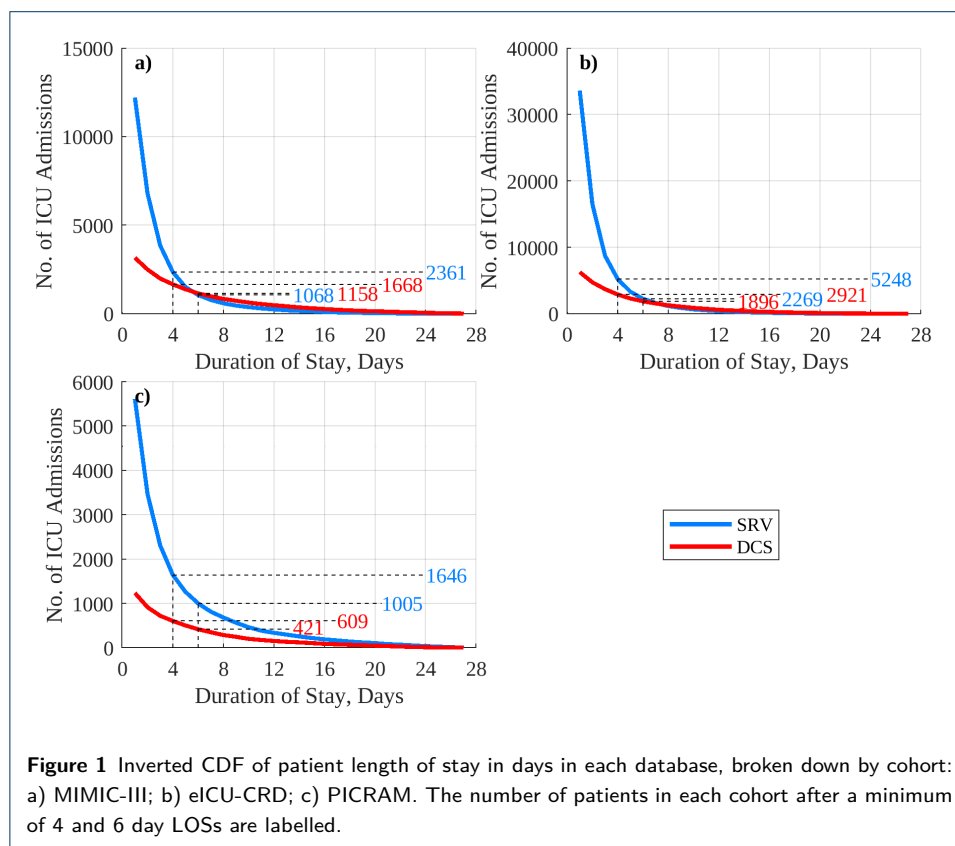
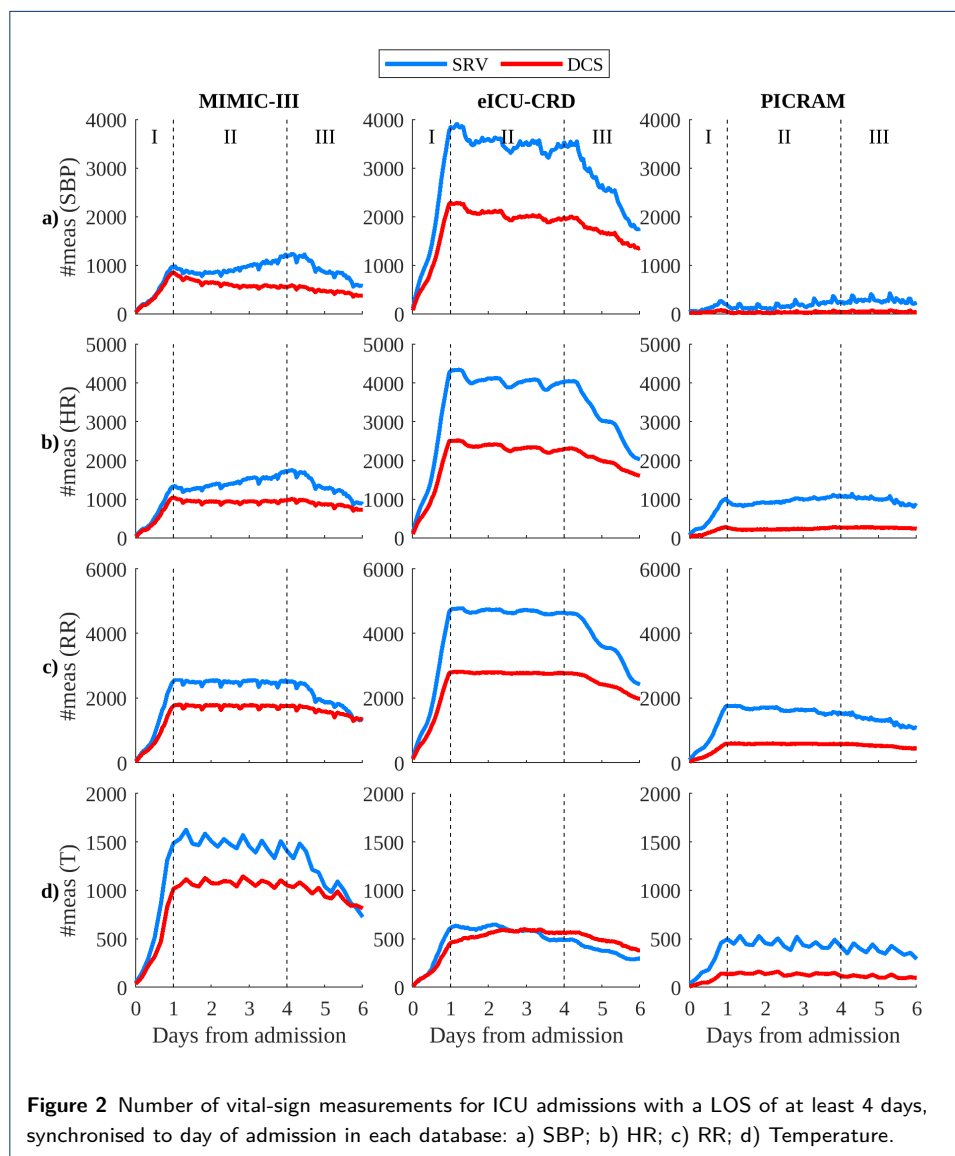


Fig. 2 shows the number of measurements for each vital sign in a given hour for the three databases. The MIMIC-III SRV and DCS cohorts have broadly comparable numbers of vital-sign measurements throughout, while for eICU-CRD there are close to double the number of measurements for SBP, HR, and RR in the SRV cohort. In PICRAM, this difference is further exaggerated with roughly 3 - 5 times the number of measurements in the SRV than the DCS cohort, and significantly fewer measurements overall. The number of SBP measurements in PICRAM is relatively low and concentrated at certain times of day, leading to noisy profiles.



Author details

¹Institute of Biomedical Engineering, Department of Engineering Science, University of Oxford, Oxford, UK.

²Critical Care Research Group, Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK.

References