

Dynamic Mortality Risk Predictions for Children in Intensive Care Units: Development and Validation of Machine Learning Models



Study Question:
Can a machine learning model use electronic health record data to estimate the 6-hour mortality risk for a pediatric ICU patient?



Study Population:
27,354 pediatric ICU admissions from 88 hospitals from 2009-2018

Predictive Variables



Routine Laboratory
Tests



Medication
Categories



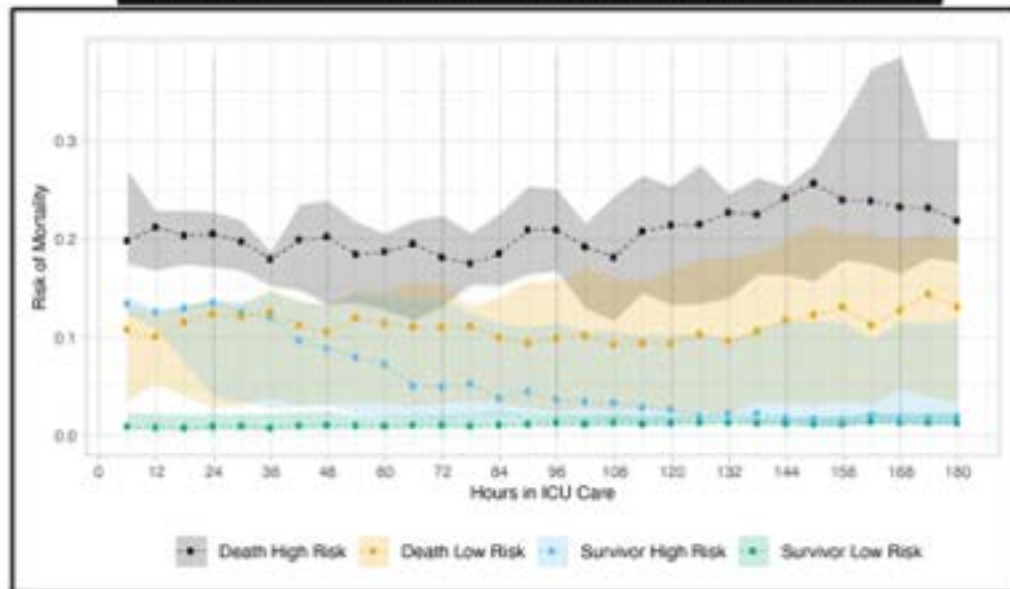
Vital Signs & Positive
Pressure Ventilation

Outcome Variable



Survival to hospital
discharge or death

Change in Criticality Mortality Index over Time



Using machine learning models based on the Criticality Index, mortality risk can be estimated for pediatric ICU patients