Predict if a patient on mechanical ventilation would be successfully extubated within 24 hours, within 7 days, or after 7 days.

Assess the significance of physiological waveform features (HRV and RRV) in predicting weaning outcomes.

Only EHR Data

EHR + Waveform

Physiological waveforms in addition to EHR data improve model performance in predicting weaning and successful extubation for patients on MV compared to EHR data alone.

From Signals to Success: A Machine Learning Approach to Weaning Outcome Prediction

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Ventilator Support Levels

- Room air
- Biow by, mask, non-rebreather, etc
- Nasal cannula
- High-flow nasal cannula
- NIPPV
- Conventional MV
- Oscillator/Jet Ventilation

SBT Types

- PS ≤ 8 cmH2O
- CPAP
- Trach collar
- T-Piece

Estubation Success/Fail

- Success: Extubate > 7 days, Uneventful discharge
- Fail: Re-intubate, Discharge on ventilation to another facility
*Expired patients excluded

SBT: Spontaneous Breathing Trial