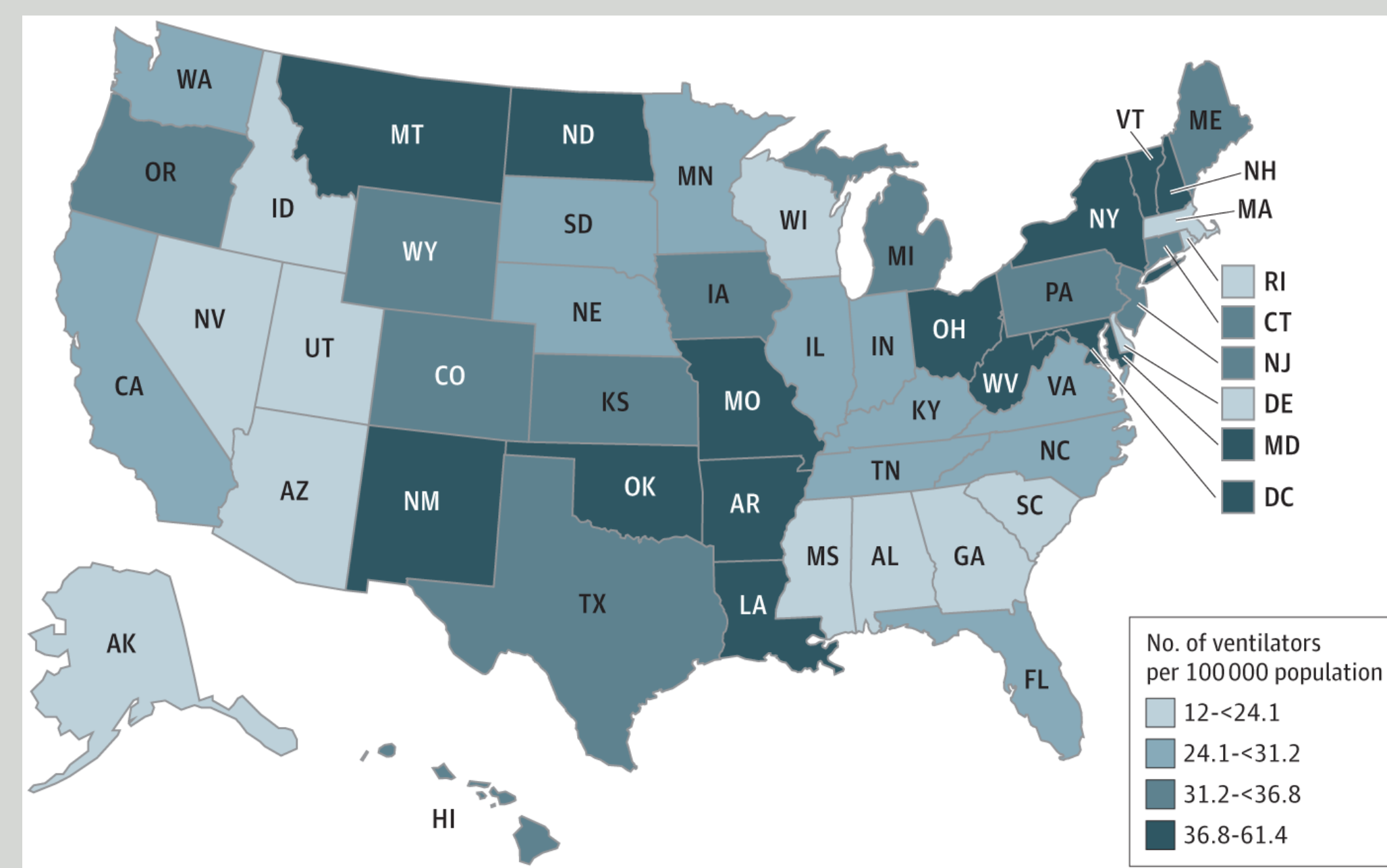
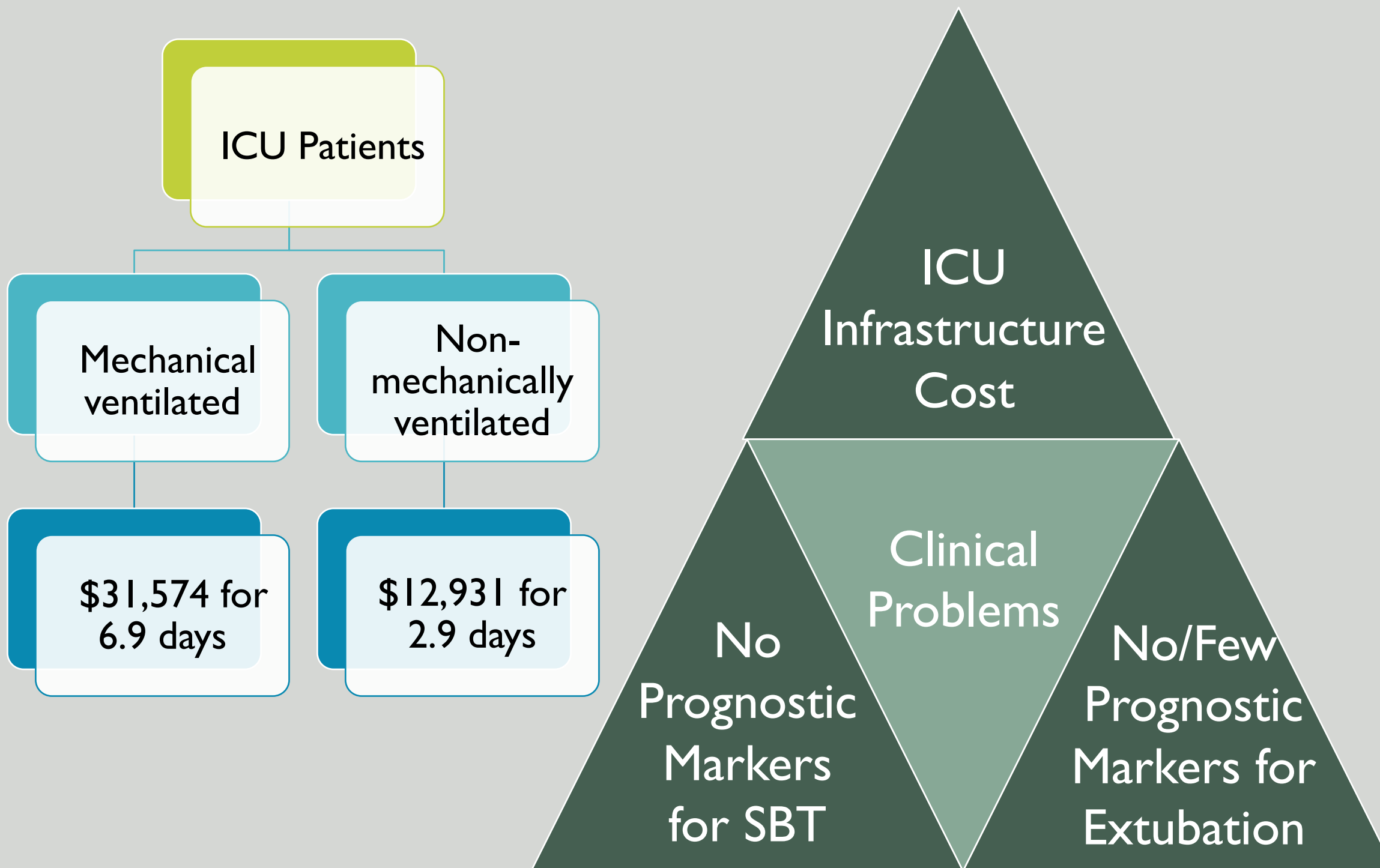




## Clinical Problem



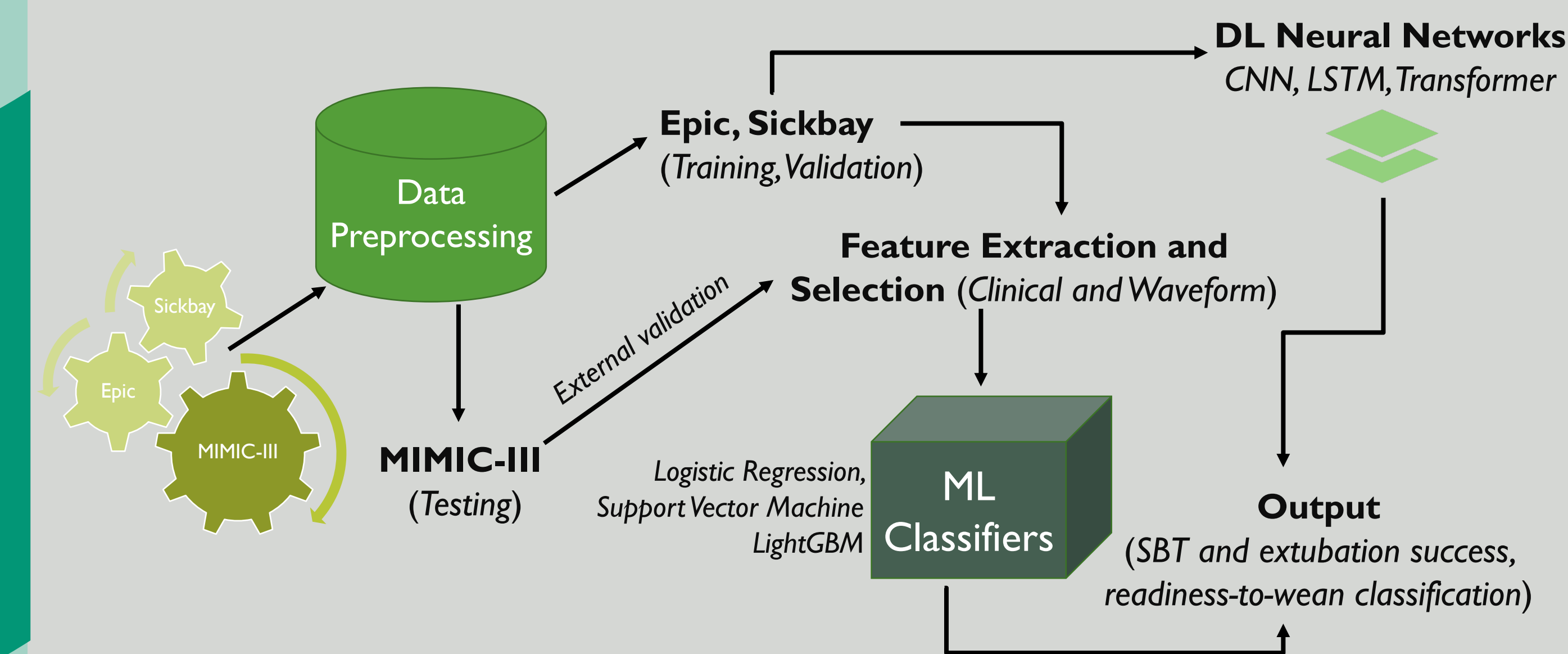
## Our Goal(s)

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

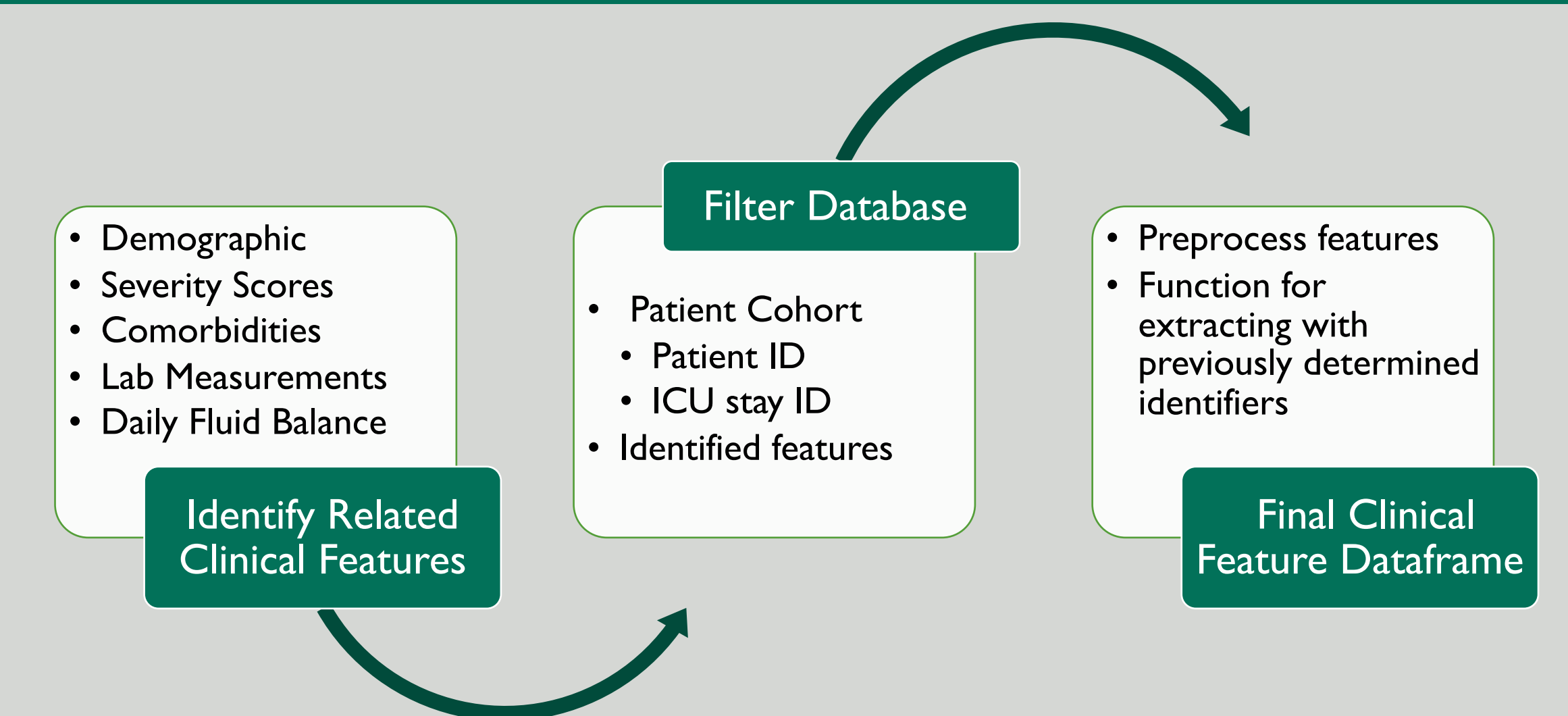
Assess the significance of physiological waveform features (HRV and RRV) in predicting weaning outcomes.

**HRV:** Heart Rate Variability  
**RRV:** Respiratory Rate Variability

## Our Approach

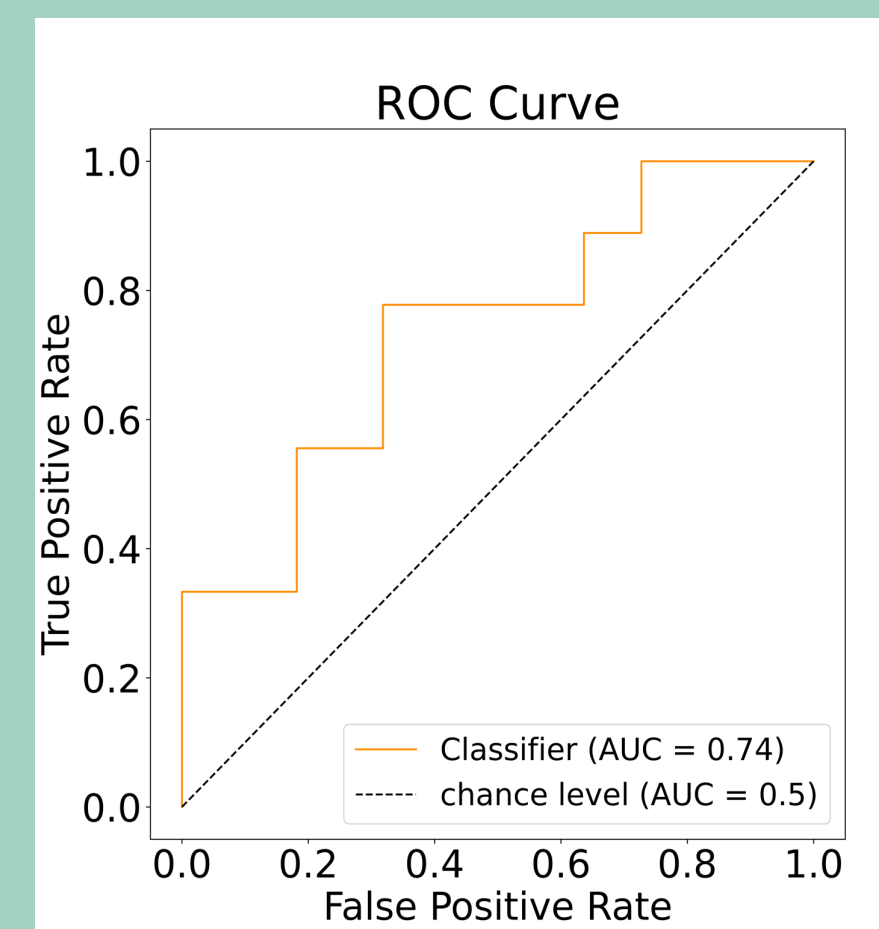
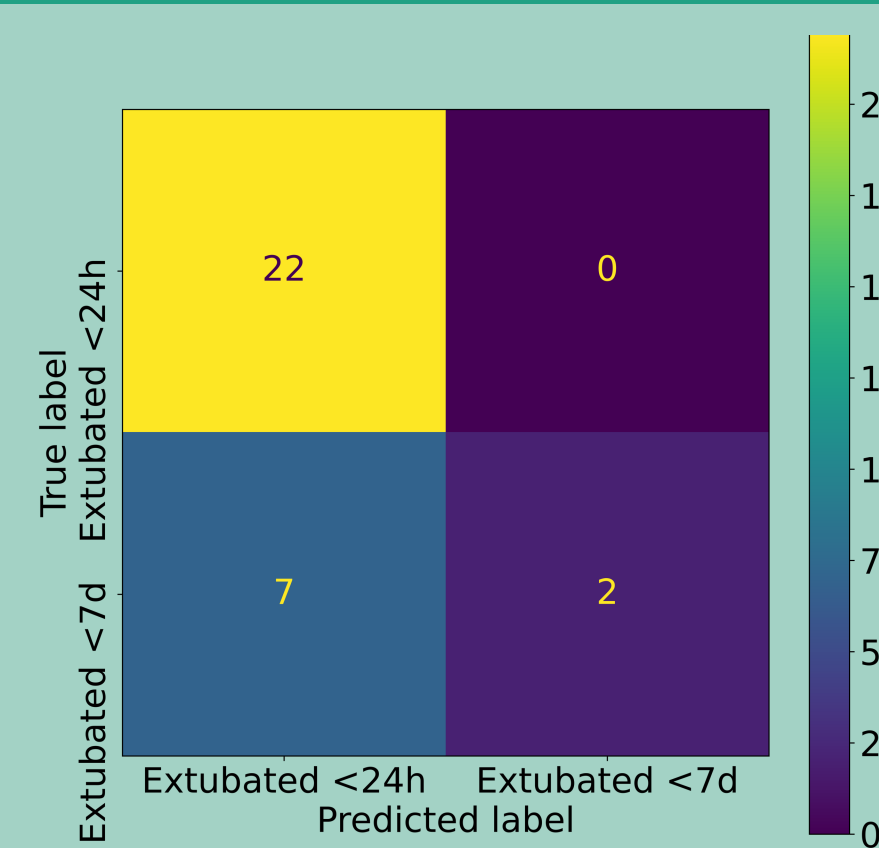


## EHR Data

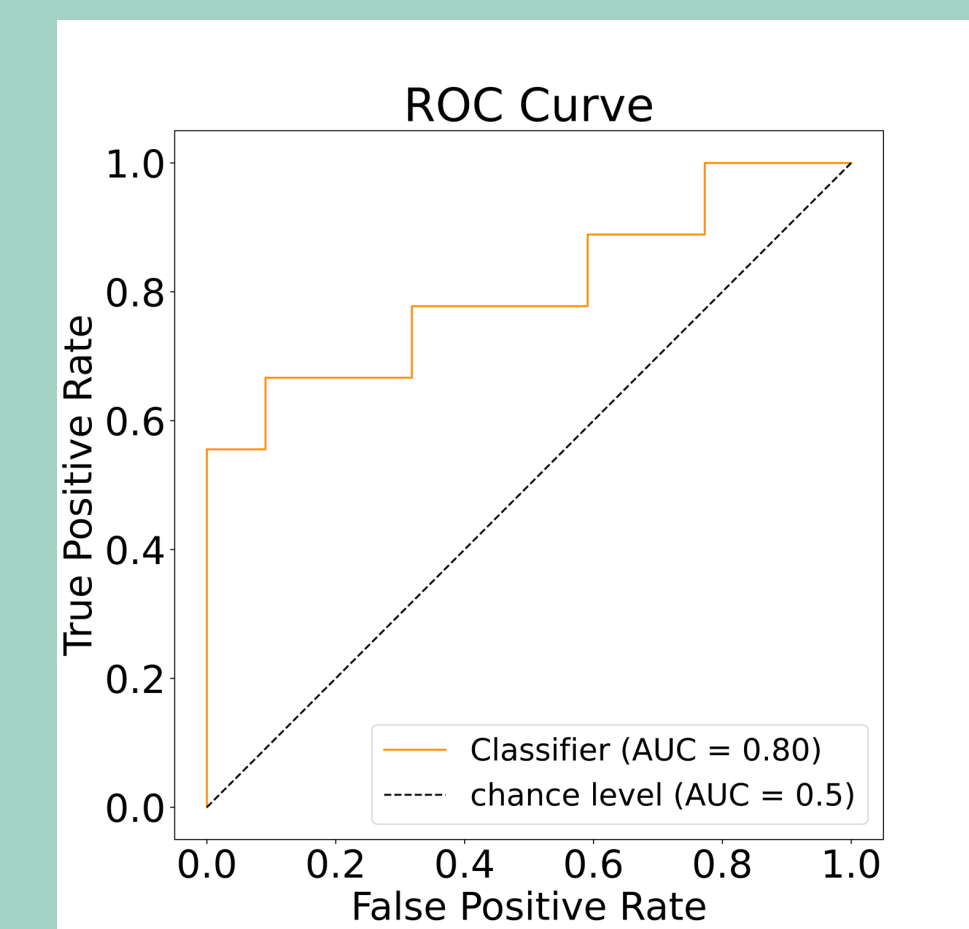
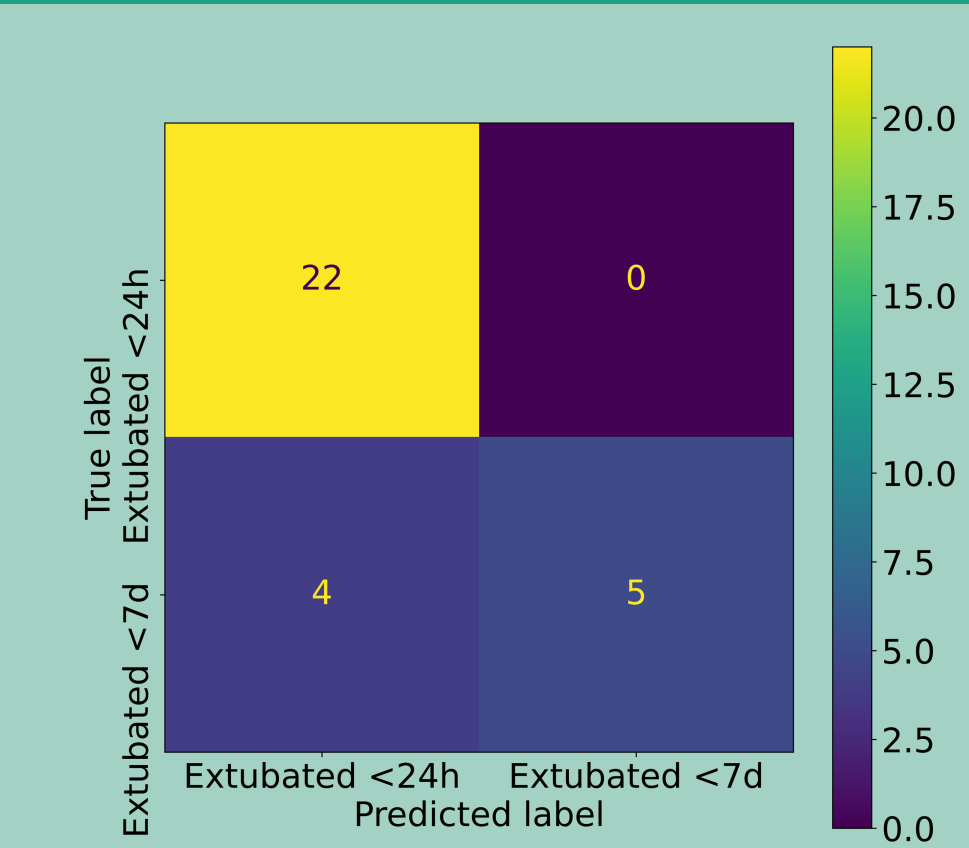


## Our Result(s)

### Only EHR Data

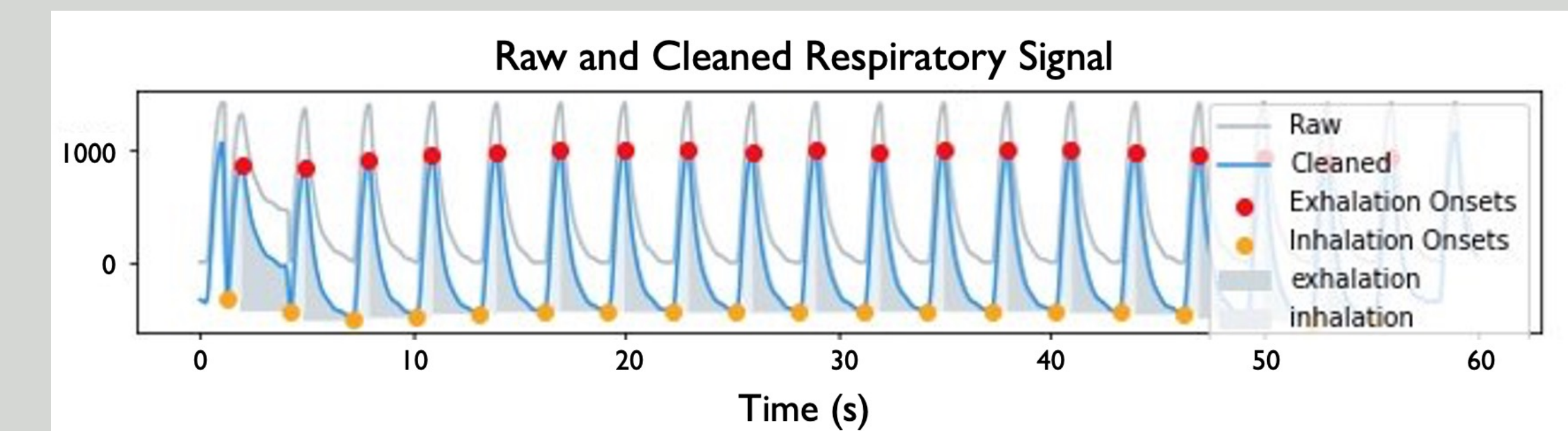
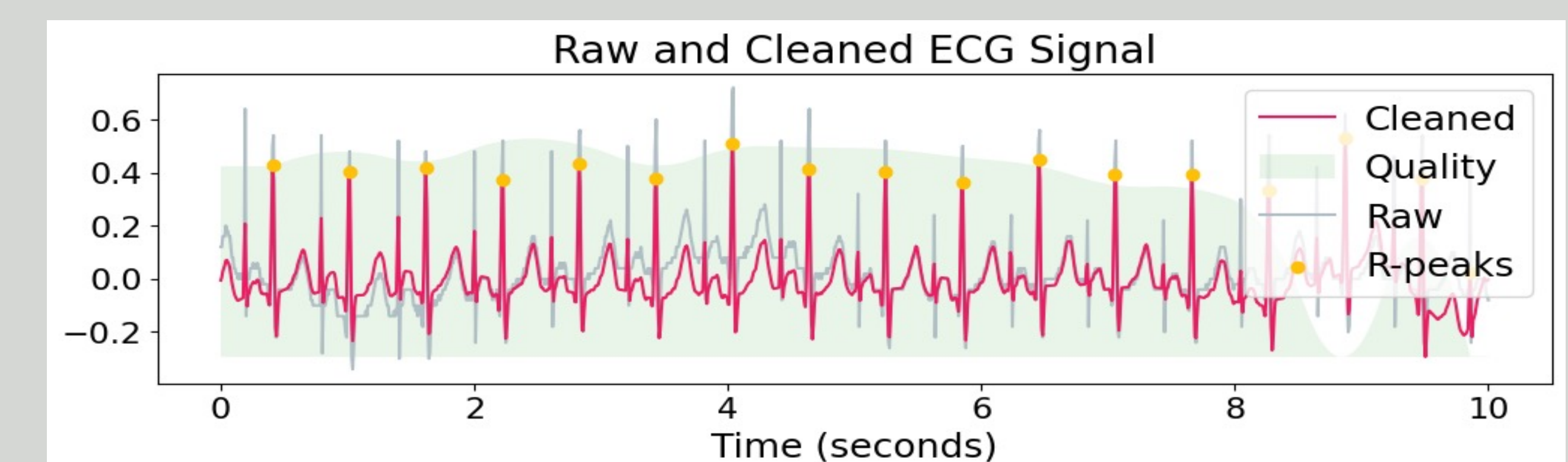
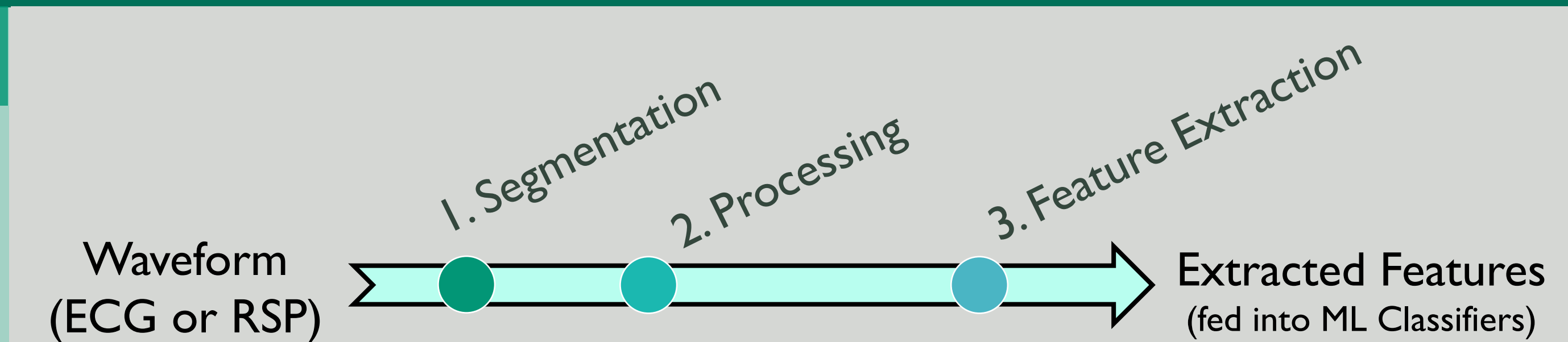


### EHR + Waveform



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

## Waveform Analysis

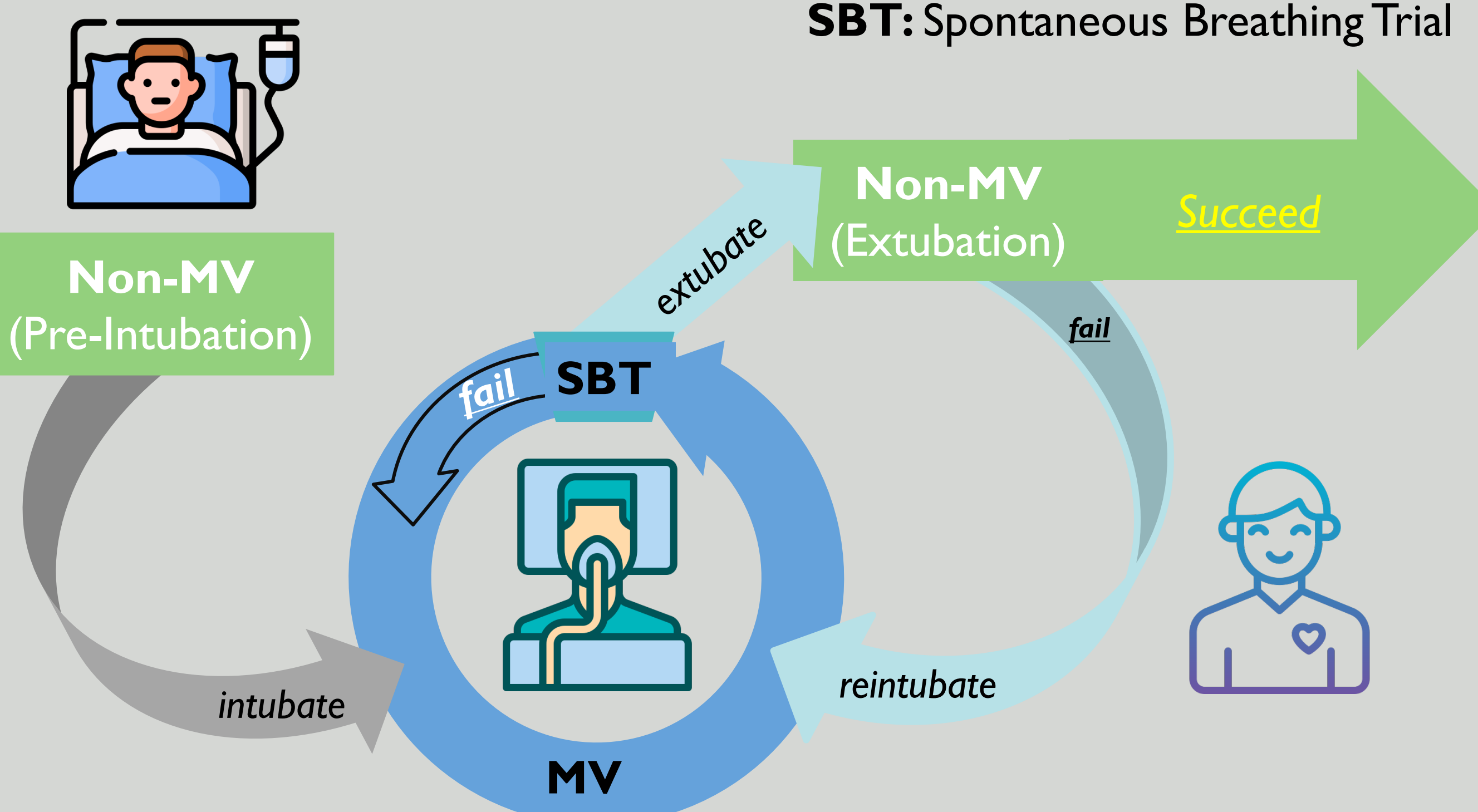


Scan the QR code for more information:



## The Weaning Process

**SBT:** Spontaneous Breathing Trial



### Ventilator Support Levels

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

### SBT Types

- PS  $\leq 8$  cmH<sub>2</sub>O
- CPAP
- Trach collar
- T-Piece

### Extubation Success/Fail

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