

# Can a 30-Minute Spontaneous Breathing Trial Gauge Extubation Readiness in Children With ARDS, and if so, What Clinical Parameters Are Most Helpful?

## STUDY DESIGN

- **100 children** age >1 month to <18 years ventilated for **pediatric ARDS** underwent **305 spontaneous breathing trials** (SBTs)

- SBT Methods:

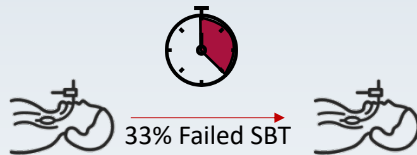
- 1st: Set PEEP to 5 cm H<sub>2</sub>O with FiO<sub>2</sub> of 0.5 for 30 minutes assessing desaturation



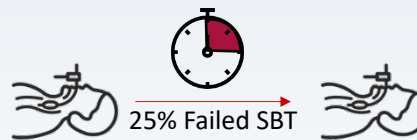
- 2nd: Set CPAP to 5 cm H<sub>2</sub>O w/o pressure support for 120 minutes assessing respiratory rate (RR), tidal volume (Vt), rapid shallow breathing index (RSBI), saturation, capnography, and effort

## RESULTS

### Within 30 Minutes



### Between 30 and 120 Minutes



40% of the Patients Who Passed at 30 Minutes Failed by 120 Minutes



**80% Failed Due to High Respiratory Effort**

### At 30 Minutes

- No clear predictive thresholds for RR, Vt, RSBI, FiO<sub>2</sub>, SpO<sub>2</sub>, or capnography

### Multivariable modeling identified

- RR at 30 minutes
- RSBI >7 at 30 minutes
- Pre-SBT inspiratory pressure
- Pre-SBT retractions

**But this model performed poorly in an independent validation set**

Clinical parameters such as Vt, RR, RSBI, SpO<sub>2</sub>, and capnography at 30 minutes cannot reliably predict SBT outcome at the 2-hour mark.