

# User-friendly Medical Device For Minimizing Complications Due to Unsafe Manual Ventilation Technique and Human Error

## Project

SafeBVM Corp.

## Team

CEO: Prathamesh Prabhudesai, MD, MBID  
President: Haris Shekhani, MD, MBID, MSL-BC

## Background

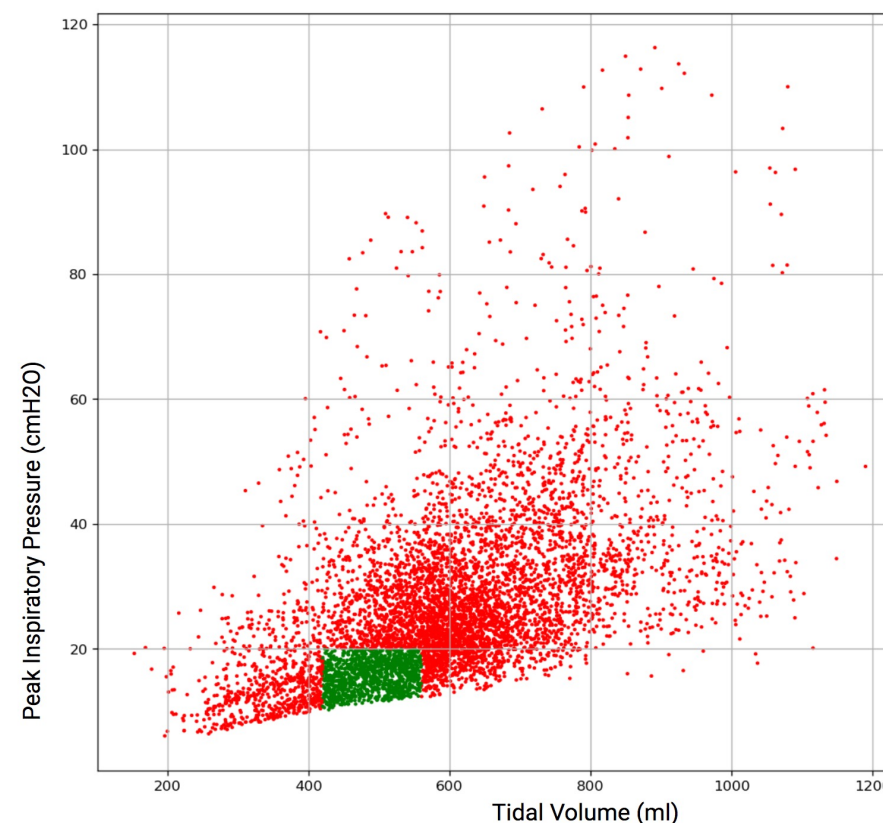
13.1 million resuscitator bags are used in the USA annually to manually ventilate patients unable to breathe on their own. Providers deliver unsafe breaths 81% of the time resulting in life-threatening complications with a mortality rate of up to 40% and healthcare costs up to \$140,000 per patient. SafeBVM's mission is to ensure that manual ventilation with the resuscitator bag is patient-centric, minimizing complications.

## Large Unmet Need

Study by University of Tennessee, and Georgia State University showed that 97% of providers delivered at least 1 breath that was outside of the recommended safe zone.

Red: Unsafe Breaths  
Green: Safe Breaths

6300 breaths delivered by 350 Respiratory Therapist & EMS providers with a standard BVM alone on a simulated test lung,

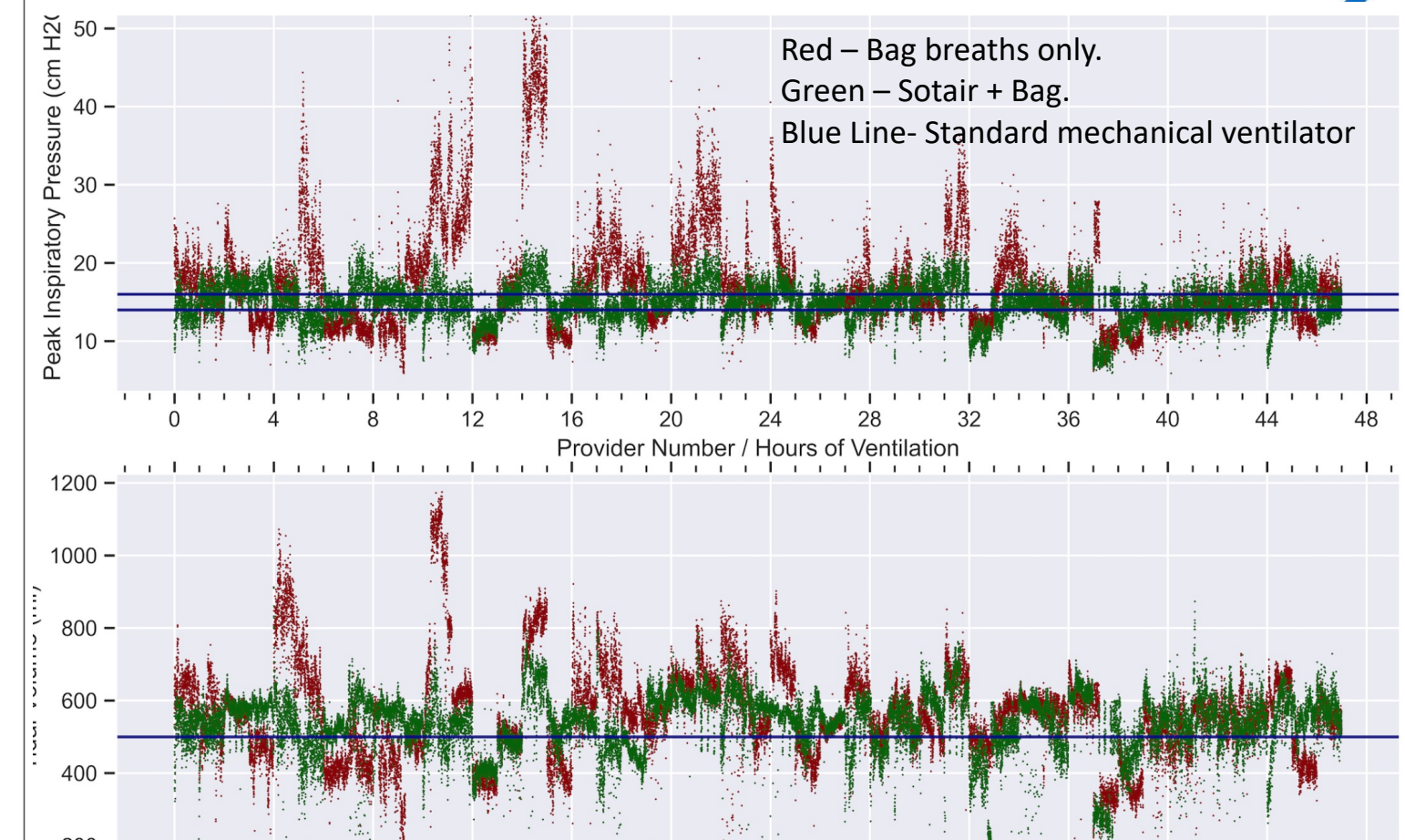


## Proposed Solution: Sotair Device

Our product eliminates the inconsistencies of manual ventilation for resuscitation teams (both in and out of hospital) with a simple to use device that optimizes the quality of ventilation delivery.



## Research



**Results:** Wide variability in tidal volume and peak pressure in unmitigated manual breaths despite prior training and independent exploration of the resuscitation equipment prior to testing. **Peak pressures ( $p < .0001$ ) and tidal volumes ( $p < .0001$ ) were significantly improved with the safety device.**

**Conclusions:** While extended manual ventilation cannot replace mechanical ventilation, **it is feasible with a safety device, which may reduce barotrauma, underventilation, and overventilation.**

## Value Propositions:

- Positive trend in cardiac arrest survival rates with good neurological outcome
- Parameter of 10-22 cm H<sub>2</sub>O peak pressure and 400-800 ml tidal volume delivered across all adult patients
- Manual ventilation closer to a mechanical ventilator