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

Project
SafeBVM Corp.

Team
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Background
13.1 million resuscitation 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.

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 H2O peak pressure and 400-800 ml tidal volume delivered across all adult patients
- Manual ventilation closer to a mechanical ventilator