MODIFIED NASAL CANNULA FOR SEAMLESS PRE-OXYGENATION TRANSITION

TECHNOLOGY TYPE
Anesthesiology

MEDICAL DEVICES
Collapsible nasal cannula that increases apneic oxygenation time for pre-operative intubation procedures.

STAGE OF DEVELOPMENT
- Ongoing testing of initial prototype.
- Next steps include optimizing the prototype design and material.

TECHNOLOGY SUMMARY
Anesthesiologists pre-oxygenate patients using an oxygen mask prior to intubation. Once the oxygen mask is removed, this supply of oxygen is normally sufficient for a healthy adult patient to be intubated within three minutes. Failure to intubate within this timeframe leads to hypoxia, brain injury, or death. The current industry standard is to use a bag valve mask (BVM) during pre-oxygenation. After pre-oxygenation, the BVM is removed for intubation to occur. Research has demonstrated use of a nasal cannula prior to and after the BVM increases the safe apneic window. Removing and replacing the nasal cannula for the BVM, however, disrupts the workflow.

The proposed technology modifies a traditional nasal cannula by replacing the rigid tubing with collapsible tubing, allowing the nasal cannula to stay in place during pre-oxygenation and ventilation. This simplifies workflow and provides anesthesiologists with more time to intubate patients.

FEATURES AND BENEFITS
- Increases safe apnea time by 1-2 minutes.
- Decreases the risk of adverse events by simplifying workflow and allowing anesthesiologists more time to intubate.
- Increases initial patient oxygen volumes.
- Provides constant gas flow.

LEARN MORE
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