

Paramedic Rapid Sequence Intubation (RSI): Improving intubation success rate and post-RSI ventilation

PROBLEM: In the first half of 2013, RSI performed by Critical Care Paramedics (CCP) showed, with variation, an average success^{*} rate of 86%; considered unacceptable for an elective emergency procedure. Mechanical ventilation is preferred over manual ventilation in intubated patients with neuromuscular blockade. December 2012 to June 2013 showed inconsistent mechanical ventilation, with a mean usage of only 83%.

NOTE: * A unsuccessful RSI does not imply a failure to oxygenate and ventilate; the standard protocol for failed endotracheal intubation is to place a supraglottic airway device.



AIM: To improve the success rate of RSI and use of mechanical ventilation following RSI to >95%

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INTERVENTION:

- Tracked intubation success rate via in-house airway registry
- Intensive re-training of CCPs and their assistants, using high-fidelity simulation as well as mental modeling
- Introduction of video laryngoscopy for potential difficult airways
- Strict auditing of every critical care airway intervention
- Daily management reports on any failed RSI or RSI without mechanical ventilation

CONCLUSIONS:

- Improvement in paramedic intubation success rate to 96% as well as reduced variation was seen following new training approach
- Mechanical ventilator usage improved to 98%, with reduced variation
- Introduction of video laryngoscopy contributed to improved intubation success rate

NEXT STEPS:

- Regular training to maintain intubation success rate and improve decision-making
- Consider video laryngoscopy as first-line to RSI
- On-going monitoring of intubation success and clinical decision-making
- Improve intubation success rate to >97% and reduce variation further

