

# A CLINICAL BUNDLE TO REDUCE PERI-INTUBATION

## **Abstract**

**Background/Purpose:** Paramedics working with critically ill patients often require endotracheal intubation facilitated by administering potent sedatives and neuromuscular blocking drugs via rapid sequence intubation (RSI). This project aimed to implement an evidence-based clinical bundle utilizing delayed sequence intubation (DSI) to decrease adverse events during prehospital endotracheal intubation by Paramedics.

**Methods:** DSI, a variant of RSI, is a form of procedural sedation given several minutes before neuromuscular blockade to facilitate goal-directed blood pressure and SpO<sub>2</sub> targets. DSI and the clinical bundle were initiated in the fall of 2021. An aviation-style emergency checklist was created to decrease the cognitive load of the paramedic team during the procedure. The bundle was implemented over 90 days and compared to data from the previous 90 days using a pre and post-intervention design.

**Results:** There was an improvement in the incidents of hypoxia, bradycardia, and hypotension when the bundle was utilized. There was no change in the cardiac arrest incidents or first-pass success rate. Paramedics reported that the bundle checklist utilized during the DSI helped ensure that essential components of the procedure were followed.

**Conclusion:** Utilization of a clinical bundle and the DSI strategy was associated with decreased adverse events in the small sample enrolled. First-pass intubation success rate remained the same. Using a checklist for each step of the bundle ensured important steps were followed during the procedure. Paramedics found the checklist beneficial to their practice.

*Keywords:* Delayed sequence intubation, rapid sequence intubation, ketamine, Paramedic, oxygenation, peri-intubation, patient positioning.