

MEETING ABSTRACTS

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## The SCRAM bag: a comparison between current practice versus a novel standardized approach for in-hospital pediatric emergency airway management

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**Introduction:** Emergency pediatric airway management and intubation require the completion of multiple individual tasks, under time pressure, with a high cognitive load, prone to error. The Pediatric Structured CRITICAL Airway Management (SCRAM) bag has been designed to rationalise and standardize the approach to pediatric airway management. We hypothesized that the use of the SCRAM bag in hospital on first exposure, with no prior training would perform at least as well as standard practice.

**Methods:** Twelve participants, comprising a combination of anesthetic registrars, operating department practitioners and pediatric emergency department nurses, were randomized into two groups and asked to prepare a 'kit dump' for a simulated pediatric emergency using either a standard resuscitation trolley or the SCRAM bag. Following at least a 2-week wash out period, each participant completed a second simulation using the alternative equipment set. The primary outcome measured was time taken to kit dump completion. Secondary outcome measures were the number of errors and self-reported cognitive load.

**Results:** Use of the SCRAM bag resulted in a shorter time to kit dump completion (95% confidence interval: 44.5 + 35.6; 8.9 to 80.1 s). This is an average reduction of 11.5%. 20% fewer errors and an average of 9.8% reduction in cognitive load were observed in the SCRAM group.

**Conclusions:** This study demonstrated that the SCRAM bag performed as well as established emergency airway preparation systems in the hospital setting. The SCRAM bag did not increase time to readiness nor increase errors, despite this being the first exposure with no prior training. This highlights ease of use which provides the user with the advantages of equipment standardization, portability and cognitive aids integrated within the SCRAM system.