

## **NOW I KNOW MY ABC's: A Curriculum to Improve Pediatric Residents' Procedural Skills in Airway, Breathing, and Circulation**

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### **Background:**

Pediatric residents must demonstrate competency across a variety of procedures in order to meet ACGME graduation requirements. Existing literature shows that the shifting realities of residency training have led to decreasing experience with critical care procedures, specifically airway management skills. To address this need, we created an Airway Procedure Curriculum, which aims to improve pediatric residents' participation, confidence, and competence with select airway procedures.

### **Methods:**

This study was approved by our hospital IRB. Thus far, residents have completed two annual sessions of the Airway Procedure Curriculum during protected resident conference time. Residents were divided into small groups proctored by emergency medicine, anesthesia, and critical care faculty to practice neonatal and non-neonatal endotracheal intubation, bag-mask ventilation (BMV), and adjunctive (oral and nasal) airway procedures. 36 residents attended the curriculum over two years and provided pre-intervention data. 31 residents provided post-intervention data. Of the N = 36 residents, 16 (44%) were Year 1, 13 (36%) were Year 2, and 7 (19%) were Year 3 in training.

### **Results:**

There were significant differences in practice attempts, confidence, and competence among program years. Second year residents practiced adjunctive airway procedures more than first and third years. Pre-intervention confidence differed among program years for non-neonatal intubation (Kruskal-Wallis test,  $p = .04$ ), where second year residents had lower confidence than first and third year residents. For all tasks, pre-intervention competence was lowest among second year residents. All procedures saw an increase in the proportion of residents who rated their confidence or competence as greater than neutral with a score of 4 or greater on a Likert Scale of 1-5 (McNemar test,  $p < .05$ ). Second year residents reported the largest improvement in competence post-intervention for multiple airway procedures (Kruskal-Wallis test,  $p < .05$ ). The magnitude of improvement in confidence and competence was positively associated with number of practice attempts.

### **Discussion:**

Exposure to procedural practice can improve participation, confidence, and competence in airway procedural skills among pediatric residents. Implementation during reliably protected educational time is a sustainable approach to delivering this curriculum. Future directions include measuring confidence and competence among residents performing these skills in real clinical scenarios and creating more procedural practice opportunities targeted to meet the specific needs of second year residents. Ultimately, this curriculum may serve as an adjunct to ensure trainees' exposure to and improved competency in required pediatric procedures.