The Use of Simulation in Resident Training to Demonstrate a Decrease in Negative Airway and Related Outcome Measures

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Learner Audience: Anesthesia Residents and Anesthesia Attendings

Background: I co-authored an abstract that was presented at the ASA 2008 entitled Decreased Airway Complications after Introduction of an Airway Curriculum in an Academic Setting. This abstract demonstrated a decrease in case cancellation secondary to the introduction of an airway curriculum. I feel that the introduction of simulation into the airway curriculum can demonstrate a decrease in other outcomes measures as well. These outcomes measures include time to secure the airway, dental trauma, patient satisfaction (sore throat), and steroid use and surgical airway.

Needs Assessment: The justification for the change include data analysis from our electronic database that shows significant referrals to dental clinic for trauma incurred during intubations, the use of steroids and postoperative ventilation related to traumatic intubations, and perioperative myocardial infarction that may be linked to a traumatic intubation.

Hypothesis: The hypothesis to be tested is the inclusion of simulation into an already existing curriculum will further decrease negative airway outcomes and decrease related outcomes associated with airway management.

Curriculum Design: The CA3 residents are stratified into 2 groups by odd and even months of the academic year. The odd month group is trained with the existing curriculum and simulation while the even month group is trained with the existing curriculum without simulation. The two groups are reversed as described in a waitlist study so that all residents benefit from simulation education. The rotation is broken into clinical and theoretical components.

Outcome: The curriculum is assessed by resident written and oral exams as well as computerized simulation exercises. The change in competence and confidence is assessed by a scorecard given to the resident for pre and post rotation assessment. Improvements will disseminate throughout the department by resident and attending teaching. This model has a feasible structure and is easily reproducible for integration to our already existing airway curriculum.
I have expedited IRB approval and adherence to the APS/NIH guidelines.