

Category : **Respiratory: airway management/CPAP**

A52 - A quality improvement project to increase the confidence of non-airway trained (nat) doctors in an intensive care unit (icu) to manage tracheostomy emergencies through simulation training

E Quek¹; S Mandal²; M Carrington³

¹Royal Free Hospital, London, United Kingdom, ²Royal Free Hospital, Thoracic Medicine, London, United Kingdom, ³Royal Free Hospital, Department of Anaesthesia and Intensive Care, London, United Kingdom

Introduction:

Airway compromise involving the formation of a tracheostomy is a significant cause of mortality in the ICU[1]. The COVID-19 pandemic saw an increase in NAT doctors re-deployed to ICU, bringing its own challenges. This quality improvement project aimed to assess the impact of simulation training on the confidence of NAT doctors to manage tracheostomy emergencies.

Methods:

A self-assessment survey and multiple-choice questionnaire (MCQ) were distributed to NAT doctors in a tertiary centre ICU to assess their confidence and knowledge in managing a tracheostomy emergency. They were subsequently invited to participate in simulation sessions based around the National Tracheostomy Safety Project algorithm [2]. Management of a tracheostomy emergency up to the point of primary oxygenation was demonstrated on a simulation dummy. Participants then ran through scenarios including blocked and displaced tracheostomy tubes. Trainees completed the same MCQ and survey post-intervention. The aims were to train a minimum of 80% of our NAT doctors in the ICU and increase the average confidence score to manage an emergency to $\geq 3/5$ (on a Likert scale 1-5: 1=not at all confident/familiar, 5=very confident/familiar).

Results:

21 out of 26 NAT doctors participated in a simulation (80.1%). 22 doctors completed the pre-simulation survey, and 16 completed a post-simulation survey. Mean score for familiarity with the algorithm improved from 2.41 (SD =0.73) pre-simulation to 4.06 (SD=0.57) post-simulation, $p<0.001$. Average confidence scores for managing an emergency improved from 1.86 (SD=0.47) to 3.81 (SD=0.75), $p<0.001$. MCQ test scores improved post-simulation, from an average score 61.4% (SD=10.3%) to 87.7 (SD=8.3%), $p<0.001$.

Conclusion:

These data demonstrate that use of a simulation teaching programme provided an effective learning interface to equip doctors with the skills to manage a tracheostomy emergency.

References:

1. Thomas AN et al. Anaesthesia; 64:358-365, 2009
2. McGrath BA et al. Anaesthesia; 67:1025-1041, 2012