

## Abstract

**Purpose:** This quality improvement project sought to evaluate the effectiveness of an Accidental Tracheostomy Dislodgement (ATD) bundle in increasing nurses and respiratory care practitioners' knowledge of and comfort level in managing airway emergencies related to the unintended dislodgment of fresh tracheostomy tubes in critical care units at a community hospital.

**Methods:** A pre-test/post-test study design was utilized to compare knowledge and comfort level at baseline and after the implementation of the ATD bundle over a ten-week period. The ATD bundle included Tracheostomy Dislodgement Algorithm, Head of Bed Tracheostomy Communication Tool, and Emergency Tracheostomy Kit. An educational video on the use of the ATD bundle was provided. Also, compliance in using the ATD bundle was recorded over an eight-week period.

**Results:** A total of twenty-four participants completed both pre-test and post-test. Eighteen participants completed only the pre-test. In the final sample (n=24), the median knowledge score on the pretest was 3.50 (IQR=1.5) and the median score on the posttest was 5.00 (IQR=1). Also, the median comfort level on the pretest was 37.50 (IQR=11.5) and the median score on the posttest was 40.00 (IQR=8). From pre to posttest on the knowledge score, the median score on the survey improved by two-point (IQR: 1.00), which was statistically significant ( $p=0.00$ ). Likewise, from pre to posttest on the comfort level, the median score on the survey improved by two-point (IQR: 5.00), which was statistically significant ( $p=0.001$ ). Furthermore, during the eight-week ATD bundle audit, there was a total of fourteen patients in the critical care units (ICU=9, SCU=5). The compliance rate was 100 percent for having the HOB Tracheostomy Communication Tool and the Emergency Tracheostomy Kit in patient rooms. The compliance rate for having the Dislodgement Algorithm in patient rooms was 55 percent in the ICU and 40 percent in the SCU.

**Conclusion:** There was an increase seen in the knowledge of and comfort level with managing airway emergencies related to the accidental dislodgement of fresh tracheostomy tubes following the implementation of the ATD bundle. Having a streamlined emergency management plan within an institution could have a positive impact on the safety of tracheostomy patients.