

Abstract:

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Improving the Self-efficacy and Knowledge Base Associated with Caring for a Child with a Tracheostomy Tube through Education in the Pediatric Intensive Care Unit

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Background & Significance: The United States annually places between 4,500-5,000 pediatric tracheostomy tubes. Reported tracheostomy complication rates range from 8% to over 50%, with younger children having increased morbidity and mortality compared to adults. During the COVID pandemic, tracheostomy care often transitioned to nursing staff. We identified a nursing knowledge gap in tracheostomy care and concern for increased tracheostomy complications in the Pediatric Intensive Care Unit (PICU).

Purpose: To improve self-efficacy and knowledge base of PICU nursing staff caring for children with tracheostomy tubes, with the additional intent to improve patient safety and decrease associated tracheostomy complications by implementation of a Tracheostomy Education Program with standardized bedside accidental decannulation questionnaire and intentional rounding.

Problem Statement: This quality improvement project aimed to develop and implement a PICU Tracheostomy Education Program for nurses to improve knowledge and self-efficacy in caring for children with a tracheostomy tube, including tracheostomy best practices, emergency response, and decannulation risk assessment. A secondary aim included decreasing accidental decannulations.

Methods: IRB #1963050.

Sample: All PICU nurses at freestanding children's hospital. A Tracheostomy Education Program for PICU nurses was developed and implemented with 3 main components- evidence-based education series, standardized Bedside Decannulation questionnaire and implementation of intentional Tracheostomy Bedside Rounding. Data collection occurred over 12 weeks with subsequent statistical analysis. Self-efficacy and knowledge assessment surveys were conducted before, immediately post, and approximately six weeks after education.

Results: Fifty PICU nurses participated. Overall improvement in pre- to post-self-efficacy scores ($p < 0.001$). Average knowledge scores improved, with pre (61.97%) to post (83.36%) ($p < 0.001$). Average retained-knowledge score of 81.58% ($p < 0.001$). 5 documented decannulations per 705 tracheostomy days.

Discussion/ conclusions: A Tracheostomy Education Program, intentional rounding, and bedside questionnaires improved PICU nursing staff's overall self-efficacy and knowledge base, with ongoing potential of improved safety and care of pediatric patients with tracheostomies.

Keywords: tracheostomy, pediatric, education, self-efficacy