Trach Safe—Preventing Accidental Death in a Home Environment for Tracheostomy Dependent Children

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A variety of pediatric chronic conditions necessitate long term tracheostomy tubes supporting effective respiration. Tracheostomy tubes involve life threatening risks, such as accidental decannulation, obstruction, airway plugging, or an acute respiratory compromise. In-home care for tracheostomy dependent children requires shared knowledge and coordination of care provided by home nurses, school nurses, families and first responders. In 2013 an increase in accidental deaths at home was identified among tracheostomy dependent children at Seattle Children’s Hospital. Three programs were subsequently developed, using continual process improvement, addressing home safety. A multidisciplinary group of experts including physicians, nurses, respiratory therapists, home care nursing agency representatives, and parents participated in program development. In the first project, Trach Safe Airway Diagram, a printed diagram of the child’s tracheostomy is provided to all relevant care providers including first responders and includes specific information regarding rationale for the tracheostomy and appropriate emergency approaches. The second project, Trach Safe Emergency Airway Class, addressed emergency airway management and was marketed to school nurses and home nursing agencies. The class involves two, five-hour classes per year. Lastly, the Near Miss Data collection project entails documentation of emergency airway events among tracheostomy dependent patients seen in the pulmonary clinic. The information is examined to identify themes and used to inform care guidelines and education programs. Outcome data supports the effectiveness of the programs. Since 2014 there have been zero accidental deaths at home in new tracheostomy dependent children compared to 17 deaths between 2003-2013. All otolaryngologists participate in evaluation for the Trach Safe Airway Diagram program and findings in 50% of these evaluations resulted in care modifications improving safety. Since 2014 approximately 100 nurses have been trained in the Trach Safe Class. Further, national interest has been generated through conference presentations and publication is underway.

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