Improving Caregiver Confidence in Pediatric Tracheostomy Care Through the Use of Training Dolls

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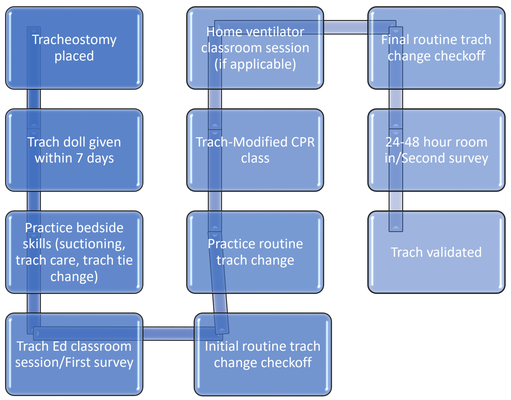
Background

- Children with tracheostomies represent a medically fragile, high-risk population.
- Caregivers must learn and demonstrate proficiency in many different aspects of caring for a tracheostomy, including sterile suction, trach care, trach tie change, manual resuscitation via bag, and trach tube change.
- The current education process includes written instructions, classroom sessions, practice on a manikin, and bedside demonstration.
- As part of a quality improvement project, caregivers were provided a training doll to practice bedside skills.
- Surveys were utilized at the beginning and end of the tracheostomy education process to determine usefulness of trach dolls.
- The aims for this study included an increase in caregiver confidence and to determine if the dolls had any impact on decreasing the time to complete training and length of stay.

Training Timeline



Methods

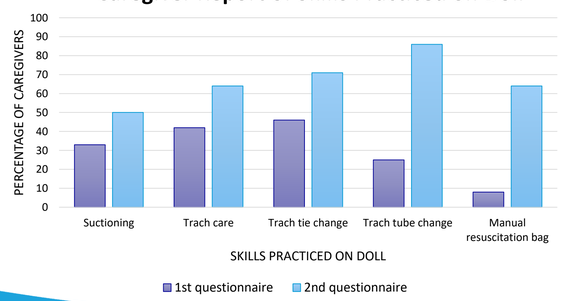
- Caregivers were provided a training doll with a trach tube within the first week of trach placement.
- Caregivers were able to practice skills hands-on prior to classroom session.
- First survey given at the time of the classroom session and second survey given after training completion.
- Survey domains included use of doll, skills practiced, and confidence in each skill.
- Retrospective and prospective chart reviews were conducted for children with a newly placed trach to compare outcomes with and without training dolls.
- Collected chart data included demographics, diagnosis, age at trach placement, time to complete training, and length of stay.

Results

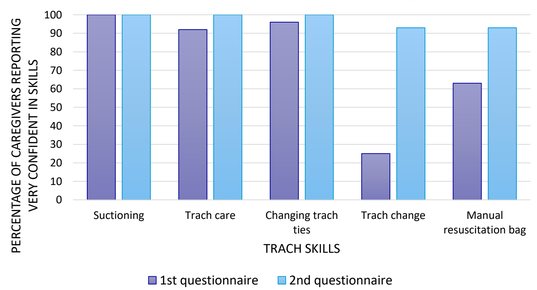
- The study included 55 children (27 with training dolls, 28 without).
- The majority were male, ventilator-dependent, and had a diagnosis of BPD.
- 24 caregivers (12 children) completed the first survey and 14 (7 children) completed the second.
- Most caregivers felt the doll was helpful for practicing skills (1st survey n 23, 98%; 2nd survey n 12, 86%).
- The percentage of caregivers who used the doll to practice skills increased from the first (n 24, 71%) to second survey (n 12, 86%).
- Length of time to complete training was 3.6 ±1.9 months (no doll) and 3.1 ±1.5 months (doll) (P = .18).
- Length of stay was 6.9 ±4.5 months (no doll) and 5.1 ±3.8 months (doll) (P = .09).

Subject Demographic	No Training Doll n 28	Training Doll n 27
Sex	19 (68%) Male 9 (32%) Female	18 (67%) Male 9 (33%) Female
Median age at trach placement	9 months (IQR 5 months – 4.5 years)	8 months (IQR 4 months – 5.4 years)
Diagnosis	BPD 9 (32%) Airway malacia/stenosis 5 (18%) Gun Shot Wound 3 (11%) SMA 2 (7%) Other 9 (32%)	BPD 8 (30%) OSA 3 (11%) Airway malacia 4 (15%) Cancer 2 (7%) Other 10 (37%)
Ventilator dependent	21 (75%)	23 (85%)

Caregiver Report of Skills Practiced on Doll



Caregiver Confidence in Performing Skills



Conclusions

- Tracheostomy training dolls seemed to help improve caregiver confidence with some skills.
- Multi-modal education may assist with individual caregiver learning needs and preferences.
- Time to complete training and length of stay were not significantly changed with the use of the dolls.
- Since caregiver confidence was improved with some skills, funding to continue providing the dolls is being evaluated.

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