Teaching Guide and Simulation for Tracheostomy and Ventilator Dependent Pediatric Patients and Their Caregivers

Peter Andrews, BSN, RN, Alizabeth Drennen, BSN, RN
Pediatric Intermediate Care Unit

Introduction
Evidence shows that new long term ventilator patients undergo lengthy hospitalizations and have complex education and discharge needs. Currently, the Pediatric Intermediate Care Unit does not have a standardized discharge guide or simulation course to decrease initial length of stay for these patients.

PICO Question
Population: Pediatric tracheostomy patients on long term ventilators.
Intervention: Implement teaching guide and simulation for long term ventilator patients
Comparison: Pre-existing long term ventilated patients versus newly tracheostomy long term ventilated patients.
Outcome: Identify ways to teach and train new tracheostomy and ventilator patients and their families to decrease length of initial hospital stay
Question: Do structured education and discharge programs result in a shorter length of stay for new tracheostomy long term ventilator patients?

Methods
A literature search was conducted using CINAHL, PubMed, and Google Scholar.

Keywords: Long term Ventilator, readmission, pediatrics, education guidelines, discharge, tracheostomy, home ventilation, simulation

Inclusion Criteria: Articles within 10 years, published in English, and human trials only

The initial search yielded 24,100 articles, 48 met inclusion criteria and 4 were included for this project

<table>
<thead>
<tr>
<th>Article</th>
<th>Methods</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graf, J., Montagnino, B., Hueckel, R., McPherson, M.</td>
<td>Retrospective chart review for patients undergoing a new tracheostomy over a two year period in the PICU.</td>
<td>A structured education and discharge program can result in a shorter length of stay for children with new tracheostomies.</td>
</tr>
<tr>
<td>Edwards, E.A., O'Toole, M., Wallis, C.</td>
<td>Review of thirty nine ventilator dependent children at time of discharge planning was initiated.</td>
<td>Tracheostomy and ventilator dependent children spent an average of 9.6 months of extra time in hospital awaiting discharge due to educational delays and gaps.</td>
</tr>
<tr>
<td>Ntoumenopoulos, G., Presneill, J. J., McElholum, M., &amp; Cade, J. F.</td>
<td>Children’s of Alabama added simulation to parent training. Debriefing was provided after the training session to reinforce correct skills and critical thinking.</td>
<td>All parents that participated were confident in tracheostomy care, recognizing signs of breathing difficulties and responding correctly to alarms.</td>
</tr>
<tr>
<td>Leurere, M.K., Be’eri, E., Zilbershtein, D.</td>
<td>Retrospective chart review of patients less than 17 who were admitted Respiratory Rehabilitation.</td>
<td>The median length of hospitalization was 10 months: 6 months for rehabilitation therapy, and 4 months after to resolve logistics of discharge.</td>
</tr>
</tbody>
</table>

Results

Discussion
Penn State Hershey Medical Center Pediatric Intermediate Care Unit does not currently have a take home guide or simulation course for pediatric long term ventilator patients and their families. Implementing an effective guideline has a significant probability of decreasing initial length of stay for this patient population. Incorporating hands on simulation of various scenarios can help better prepare caregivers and make them more comfortable in caring for their medically complex child.

Conclusions
Our findings showed that early implementation of structured educational programs have resulted in shorter length of stays and more confident caregivers. In the Pediatric Intermediate Care Unit many tracheostomy and ventilator dependent patients are medically cleared for discharge but are awaiting for caregivers to become competent in their care. Based on the information in these articles, patients and their caregivers significantly benefited from educational guides and the simulation courses. Implementing these findings into the Pediatric Intermediate Care Unit would decrease these patients initial length of stay and lead to more confident caregivers.

References