Preventing Unplanned Extubations in the Pediatric Intensive Care Unit
Courtney E. Garry, MSPH, MSN, RN, Judy Ascenzi, DNP, RN, CCRN

Background
Before intervention there was an UE rate of 0.4 or 2 extubations per month. UE carry a significant risk to patient safety, result in increased morbidity, increased lengths of hospital stay, and can result in undue harm, and even death.

Purpose Statement
This QI project sought to minimize risk to patient harm and decrease the amount of unplanned extubations by creation of a bundle and increased observation through a telemedicine entity.

Aim 1
Increase nurses’ knowledge and perception of risk factors for unplanned extubations within a 12-week time period.

Aim 2
Develop a UE bundle including identification of risk factors, preventative measures, safety checks, and use of telemedicine entity on the PICU in a 12-week time period.

Aim 3
Decrease unplanned extubations by 10% in 12-week time period.

Methods
- Design: QI Mixed Methods Pre-test/Post test; survey
- Sample: All PICU nurses (n=150); cases of unplanned extubations from July 2016 to January 2020.
- Setting: 48 bed Pediatric ICU in the greater Baltimore area

Intervention
Development of an education bundle, intubation checklist, and telemedicine utilization customized to the specific pediatric population on the ICU.

Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes, n (%), n</th>
<th>No, n (%)</th>
<th>Maybe, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have an active SBP order?</td>
<td>320 (89%), 365</td>
<td>46 (11%)</td>
<td>1 (%)</td>
</tr>
<tr>
<td>Do you have an active WAT order?</td>
<td>0 (0%), 365</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Do you have an active ETU order?</td>
<td>0 (0%), 365</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Do you have an active FPN order?</td>
<td>181 (28%), 255</td>
<td>251 (33%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Overall 1.75% decrease in the number of Unplanned Extubations

Conclusion
Results were similar to other studies, suggesting that bedside education, toolkits, increasing nursing knowledge of risk factors, and addition of increased observation from the telemedicine nurse were effective in reducing rates of UE. This study highlights the importance of practice policy change and a need for continued interdisciplinary team approach for intubated children. Similar studies should focus on the benefits of telemedicine for increased observations for other purposes and the ability to translate this project into different settings around the hospital.

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