Chasing Never: Unplanned Extubation

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**Recommended Citation**

Gaspers, LeeAnna BSN,RN; Gerber, Brittney BSN,RN; Hersma, Madison BSN,RN; Keith-Chancy, Erin BSN,CCRN; Knodell, Audrey BSN,RN; Miller, Jordan BSN,RN; Morrow, Liz BSN,RN; Otterson, Tara BSN,RNC; Rogers, Chantal BSN,RN; and Slaven, Abby BSN,RN, “Chasing Never: Unplanned Extubation” (2018). *Presentations*. 7.

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Chasing Never: Unplanned Extubation

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Acknowledgements

- Dr. Jean Palloto
- Janet Klein MSN, RN
- Erin Keith- Chancy BSN, CCRN and Tara Otterson BSN, RNC
- Nancy Allen, MS, MLS, RD, LD
- Kerrie Meinnert, RRT Coordinator
<table>
<thead>
<tr>
<th>Demonstrate Quality Outcomes</th>
<th>Improve Performance</th>
<th>Strengthen Market Position</th>
<th>Deliver Value</th>
<th>Elevate Academic Profile</th>
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<tr>
<td>Demonstrate quality, safety and clinical effectiveness.</td>
<td>Improve processes, increase capacity for innovation and service excellence, and strengthen our financial position.</td>
<td>Strengthen Children’s Mercy’s market position in the Metro area, region, and beyond.</td>
<td>Deliver value, expertise, and efficiency through an integrated pediatric health system.</td>
<td>Enhance the research capabilities and accomplishments of CMH and strengthen the quality of the educational experiences.</td>
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Graduate Nurse Residents and Knowledge Translation Scholars have been collaborating with intra-disciplinary leaders in an 84 bed, level 4, neonatal, intensive care unit in to decrease the rate of unplanned extubations (UPE) since 2015 using quality improvement methodology. Despite previous efforts, the unit has not yet met its benchmark for the UPE rate (0.8 per 100 vent days). The evidence suggests that there is a great deal of variance in definitions and reporting related to UPE. Identification and standardization of potentially better practices for nursing care of intubated patients will be required to make UPE a “never-event.”
• The goal is to decrease the rate of unplanned extubations in the ICN from 1.38 per 100 ventilator days in 2016 to 1 event per 100 ventilator days in 2017.

• From January 2017 to January 2018 our rate varied from 0-1.9
PICO Question & Aim Statement

**PICO Question**

- **P:** In the Intubated neonate
- **I:** can the bundling of potentially best practice recommendations (tube location documentation, 2-person handling, and management of positioning and secretions) and standardized hourly assessment with documentation of compliance
- **C:** current standard of practice
- **O:** decreased unplanned extubations

**Aim Statement**

- Decrease the rate of unplanned extubations in the ICN from 1.38/100 ventilator days in 2016 to 1 event/100 ventilator days in 2017.
The Big Picture: UPE as an adverse event

- NICU infants are at high risk for adverse events
- Adverse events occur in 4/10 intubations
- Odds double with number of intubation attempts
- Odds of an adverse event are quadrupled when the procedure is emergent
- Most common cause of emergent intubation is UPE
Direct Airway Trauma: an example of a UPE-associated adverse event

Risks for developing laryngotracheal stenosis

- Higher number of vent days
- Higher number of intubations
- Higher number of attempts
- Infection
PDSA’s Implemented
Eight NLNs and 2 KT Scholars attempted to increase frequency of ETT position documentation to hourly on their intubated patients for 1 month. Self-reported compliance was poor. Discussed reasons related to ease of use within the EMR. Proposed changes to EMR/documentation standard.
Implementation

- Increase frequency of ET tube assessment
- Align with UPE Taskforce checklist for potentially better practices
- Cerner checklist for nurse documentation
  - Hourly assessment
  - Supportive positioning
  - Securement method intact
  - Ventilator tubing stabilization
  - Secretions managed
PDSA’s Implemented: 2

Re-brand interventions to decrease UPEs in a cohesive bundle, reinforce education. Meet with Stakeholders (PICU educators, UPE Taskforce leaders) to discuss conditional fields for hourly assessment of intubated pts. Learned process for changes to PHRED. Initiated by Tara Otterson, RN. Go Live for new documentation standard is Nov 1st.
At least as important as a PIV...

- A dropdown assessment for endotracheal tube patients has been added.
- Conditions that prevent UPE should be documented hourly.
- There are less than 15 patients with ET tube on any given day in the ICN.

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<tr>
<th>Oximetry Site</th>
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<tr>
<td>FiO2</td>
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<tr>
<td>Oxygen Flow Rate</td>
<td>L/min</td>
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<td>Delivery Device Oxygen</td>
<td>Ventilator</td>
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<td>VAP Prevention</td>
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<td>Unplanned Extubation Prevention</td>
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Unplanned Extubation Prevention
- Supportive positioning
- Securement method intact
- Ventilator tubing stabilized
- Secretions managed
Provide staff education on bundle elements (positioning, securement, vent tubing, secretion management), risk factors for UPE and long term consequences of UPEs. Create education plan. Presented at November 2017 ICN Update, reinforced with newsletter, and provide Just in Time Training in December 2017.
Twin A, born at 25 3/7 weeks and 630g

“Multiple” intubation attempts in the Delivery Room

HUS WNL, no PDA

Infections x3 (oomphalitis at 1wk, pneumonia at 1mo, NEC at 2mo)

“Trials of extubation” failed x 8 with 5 UPEs

Each reintubation required multiple attempts

Vocal cords bleeding/swollen with attempts, despite steroids

Transferred at 37 weeks for airway evaluation, twin at home
ICN Case Study

- Microlaryngoscopy and tracheostomy at 40 weeks
- Blunted carina, evidence of trauma,
- Large amount of granulation tissue, tracheomalacia
- Ongoing problems with trach changes, difficult cannulation and bleeding delayed discharge
- Microlaryngoscopy and stoma revision at 52 weeks
- Found Grade 3 subglottic stenosis, scarring
Grade 3 Subglottic Stenosis

The lumen of the airway is 70% or more occluded.
Case Images

Pre-Procedural

Post-Procedural
Project Outcomes

Chart Audits for New UPE Checklist
Barriers/Lessons Learned

- Just in Time Training (JITT)
  - Resistance to change
  - Additional workload
- Case study was most valuable education
- Consistency to practice among disciplines
  - Purpose of standardization
- Team participation/Root cause analysis
  - UPE debriefing
Pediatric Nursing Implications

- Nurses are responsible to do their part to decrease adverse outcomes
Conclusion

- The benefits of having small groups working on this topic
  - Keeping UPE interventions in everyone’s minds
  - Maintaining staff engagement
  - Provision of re-education
  - New ideas and inspiration
  - Generation of quality data over time
References


Questions