Living up to the Challenge:
Preventing Unplanned Extubations in the NICU

Advocate Health Care
Now part of ADVOCATE HEALTH

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Background

The NICU at Advocate Good Samaritan Hospital (GSAM) is a 20 bed Level III NICU located in the SW suburbs of Chicago.

Our NICU experienced a total of 5 unplanned extubations (UE) in 2022 which exceeded the nationally accepted goal of <1 UE/100 vent days.

A rate of 3.59 created a quality improvement opportunity for our unit.
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<thead>
<tr>
<th><strong>Data Gathering</strong></th>
<th><strong>Findings</strong></th>
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<tr>
<td>o An interdisciplinary team in the NICU did a retrospective audit on each UE case in 2022</td>
<td>o All UEs were not being reported as safety events</td>
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<td>o High-risk maneuvers that increase the risk of an UE not identified</td>
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<td>o Lack of an airway designee when performing high risk maneuvers</td>
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<td>o Debriefing process was unclear and inconsistent</td>
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<td>o UE contributing factors: tape securement/loose and repositioning</td>
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<td>o Current standard work was compared to evidence-based best practices</td>
<td>o Direct care staff were recruited to help with the project</td>
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## Methods

### Implementation Plan

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<tr>
<th>Date: 10/30/20</th>
<th>Location: NICU</th>
<th>Time of Day: 5PM</th>
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<tbody>
<tr>
<td><strong>Advocate Good Samaritan Hospital</strong></td>
<td><strong>STANDARD WORK: AIRWAY SECURITY/REDUCING UNPLANNED EXTUBATION + 10 NICU PARTNERSHIP (IT &amp; RN)</strong></td>
<td><strong>Follow up w/ CTR for confirmation of ETT placement</strong></td>
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<td><strong>Initiator &amp; Owner</strong></td>
<td><strong>WEI or RN to assist if flag technician (AV, RL)</strong></td>
<td><strong>Confirm proper tube placement</strong></td>
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<td><strong>Primary Contributors</strong></td>
<td><strong>Ensure proper Cuff &amp; ETT evaluation</strong></td>
<td><strong>Tension withdraw tube ETT (Rapid advance the ETT 7-7.4 is approx 2mm/m above center)</strong></td>
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<td><strong>Key Findings</strong></td>
<td><strong>Avoid teasing &amp; reason for lack of ETT &amp; ETT</strong></td>
<td>** confirms proper ETT placement**</td>
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<td><strong>Identified high risk situations which increase the risk of an UE, number of people required, and introduced the concept of an airway designee</strong></td>
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<td><strong>Performing and documenting a debrief after each event</strong></td>
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<td><strong>Additional tips on how to properly size and adhere Duoderm to the face</strong></td>
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## Airway Security & UE Standard Work Updated

- Identified high risk situations which increase the risk of an UE, number of people required, and introduced the concept of an airway designee.
- Performing and documenting a debrief after each event.
- Additional tips on how to properly size and adhere Duoderm to the face.

## Participation in a High-Fidelity UE Simulation

- All NICU RNs were required to participate in a simulation.
- Observations from the simulation revealed the need for further guidance on endotracheal tube securement.

## Post-Implementation

- A measuring, cutting, and securement guide with videos was then created.
- A NICU nurse and a Respiratory Therapist met with each staff member from both departments to observe return-demonstrations.
- The team continued to review progress monthly with scheduled meetings.
Debriefing Tools

Fig 1. Debrief guide added to our standard work

Fig 2. Ventilator card at bedside updated to include debrief questions
Education

Post-implementation
Results

**Last UE:** October 2022

**Current UE Rate:** 0

**Nursing and RTs:**
- Positive feedback on tools to help them cut appropriately sized tape.
- Increased confidence reported after completing the training.

**Data tracking & Debriefing:**
- A safety event and debrief held and documented every time we’ve had a potential UE
- Scheduled monthly meetings to review each event
Conclusions

Keys to our Success:

✓ Identifying key people to work together
✓ Continuing to review our current practices
✓ Developing an implementation plan to target specific areas for improvement
✓ Being open and willing to create something that didn’t exist but was needed
Thank you!