Decreasing Unplanned Extubations by Taping Technique & Creating a Culture of Safety

Karishma Rao
*Children's Mercy Hospital*, krao@cmh.edu

Beckie Palmer
*Children's Mercy Hospital*, rlpalmer@cmh.edu

Christopher R. Nitkin
*Children's Mercy Hospital*, crnitkin@cmh.edu

Christian Anthony Schneider
*Children's Mercy Hospital*, caschneider@cmh.edu

Brandy Huitt
*Children's Mercy Hospital*, bhuitt@cmh.edu

See next page for additional authors

Follow this and additional works at: https://scholarlyexchange.childrensmercy.org/presentations

Part of the Patient Safety Commons, Pediatric Nursing Commons, and the Pediatrics Commons

**Recommended Citation**
Rao, Karishma; Palmer, Beckie; Nitkin, Christopher R.; Schneider, Christian Anthony; Huit, Brandy; Terhune, Molly; Orwick, Ashley; Wilderson, Dianne; Carboneau, Sarah; McKee, Jenny; Meinert, Kerrie A.; and Pallotto, Eugenia K., "Decreasing Unplanned Extubations by Taping Technique & Creating a Culture of Safety" (2019). *Presentations*. 12.
https://scholarlyexchange.childrensmercy.org/presentations/12

This Presentation is brought to you for free and open access by SHARE @ Children's Mercy. It has been accepted for inclusion in Presentations by an authorized administrator of SHARE @ Children's Mercy. For more information, please contact library@cmh.edu.
Disclosures

We describe an ETT taping technique that differs from the manufacturers recommendations

Presented at PAS 2019

No other disclosures
Background: Unplanned Extubations

- Defined as dislodgement or removal of the endotracheal tube at a time that was not specifically intended or ordered by the physician or practitioner
- It is a common problem in Neonatal ICUs
- It places patients at increased risk of adverse events

Reducing Unplanned Extubations in the NICU; Lori Merkel, Kimberly Beers, Mary M. Lewis, Joy Stauffer, Dennis J. Mujsce, Mitchell J. Kresch; Pediatrics 2014
Background: NICU

- Level IV Neonatal ICU, 84 beds
- Over 300 RN’s, 80 RT’s, 60 NNP’s
- 32 Neonatologists, 7 Fellows
- Over 1000 admissions per year
- Average ventilator days per month ~330-350
- Average UPE rate 1.6-2.0 events per 100 ventilator days
SMART Aim

Decrease the UPE rate in our Level IV NICU to less than 1.0 event per 100 ventilator days by December 2018
Root Cause Analysis

Pareto Chart for UPE 2018 (n=44)
Debriefing after Leadership Rounds
SMART Aim
Decrease the UPE rate to less than 1.0 event per 100 vent days by December 2018

Key Drivers
- Standardize ETT Securing Method
- Multidisciplinary Care Coordination
- Increase Communication, Awareness, and Spreading Safety Culture
Taping Technique
New Taping Technique

Where taping usually ends

Spiral tape past top of Device stem

Spiral tape back down ETT
Team Education

- An educational module was created
- Consisting of a video followed by a quiz
- It highlighted the new taping technique
- Defined team member roles at bedside
- Reinforced device use recommendations
Educational Module

n = 536 people

- Completed: 93%
- Registered: 6%
- Other: 1%

Children's Mercy
**Bedside Checklist**

### Unplanned Extubation Prevention

**ETT Discussion**
- Did the team assess extubation readiness?
  - Yes
  - No
  - N/A
- Timely Blood Gas Parameters Discussed?
  - Yes
  - No
- Is there a history of previous unplanned extubation? (If history of UE, patient is high risk)
  - Yes
  - No
  - Cause: ______________

**Assessment**
- Is the tape clean, dry, and secure?
  - Yes
  - No
- Observe for damp, loose, or visibly soiled.
  - Yes
  - No
- Does the RN/RT have any concerns about the integrity of the tape?
  - Yes
  - No
- Does the RN/RT have any concerns about the integrity of the Neobar? (secure? appropriate fit/size?)
  - Yes
  - No
- Do you know the measurement of the ETT? (ETT card present and accurate at bedside)
  - Yes
  - No
- Are secretions managed?
  - Yes
  - No

### Sedation / Agitation

- No Sedation
- Agitated
- Comfortable

### High Risk Procedures

- 2 healthcare providers (1 person dedicated to monitor the tube) were used for any high risk procedure including:
  - Securing, repositioning, ETT manipulation
  - Repositioning patient
  - X-rays
  - Bedside invasive procedures (i.e. central line placement, bedside surgery)
  - Kangaroo care transfer
  - In-house transports

- Discussed ETT on Rounds:
  - Yes
  - No
  - Persons Present During Discussion:
    - RN
    - RT
    - Physician
    - NNP
    - Other: ______________

Each section assessed on your shift:

**Date:** ______________
- Shift: 7a 7p
- Bedshift: ______________
SMART Aim
Decrease the UPE rate to less than 1.0 event per 100 vent days by December 2018

Key Drivers
- Standardize ETT Securing Method
- Multidisciplinary Care Coordination
- Increase Communication, Awareness, and Spreading Safety Culture

Interventions
- New Taping Technique
- Creating ETT Taping Video
- ETT Bedside Checklist
- Multidisciplinary ACA after every UPE event
- ETT location documentation
- “No UPE November”
“No UPE November”

- Month long educational program
- Weekly educational emails
- Aimed at reinforcing new practices
- Increased awareness
- Filled in gaps in education
- Reinforced every disciplines role in preventing UPEs
Compliance with Process Measures

Process Measure % Compliance

- Checklist Available (Day Shift): September 65%, October 56%, November 90%
- Checklist Available (Night Shift): September 72%, October 60%, November 85%
- Checklist Utilized (Day Shift): September 23%, October 14%, November 79%
- Checklist Utilized (Night Shift): September 43%, October 31%, November 70%
- X-ray Holding: September 48%, October 50%, November 78%
- X-ray Landmark Documented: September 79%, October 88%, November 92%
Decreased UPE Rate

Unplanned Extubation Rate

Rate per 100 Ventilator Days

- UCL
- CL
- Taping Modification
- Huddle board & Neobar Education
- Bedside Audits
- NO UPE November

NO UPE November
Balancing Measures
Driving Culture Change

Two Prong Approach

Technical Skills
- What
- How

Adaptive Skills
- Who
- Why
Change in Culture
Change in Culture
Summary

• Unplanned Extubations should be a never event
• Engaging all members of the health care team to own the solutions is critical to success
• “No UPE November” promoted increased awareness and team ownership of the UPE goal
• Ensuring access to resources, securement process improvement and encouraging a culture of safety we successfully lowered our UPE rate
Future Directions

• Sustain and strive to achieve lower UPE rates
• Ultimate goal of UPE rate less than 0.5 per 100 ventilator days
• Setting up debriefing tool using QR code