Preventing Unplanned Extubations in the NICU using a Multidisciplinary Team Approach

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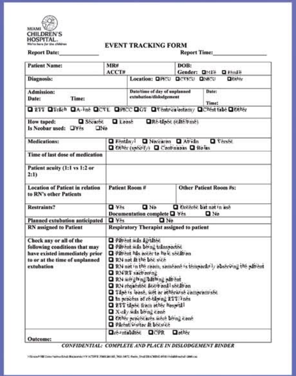
Introduction

One of the common procedures in the NICU is ETT intubation for the treatment of prematurity and airway management. This high volume of ventilator use leads to unplanned extubations which is a significant patient safety and quality concern. Unplanned extubations can cause unnecessary trauma from emergency intubations and increased length of stay. This is a problem that affects all NICUs across the nation.

Practice Change Methods

Miami Children's Hospital NICU has established processes to decrease the rate of unplanned extubations using a multidisciplinary approach in the NICU. Practice changes began in 2009 when the NICU leadership team identified the possible causes of high rates of unplanned extubations. We collaborated with physicians, respiratory department and nursing to educate, train and implement practice changes at the bedside. Airway rounds were created for the RN and RT to come together to a patient's bedside to assess securement and placement of ETT and discuss possible needed interventions. Airway rounds are conducted twice a shift, once in the beginning and once towards the ending of the shift. Staff was trained on standardized taping of ETT and other securement devices were discontinued from the unit that was seen as barriers to standardization. Ventilator cards were added to each patient's ventilator with ETT size and placement for reference. Team huddle forms were created to review post unplanned extubation event and discuss possible explanations for occurrence and prevention. In addition, an event tracking form was created for data collection and auditing.



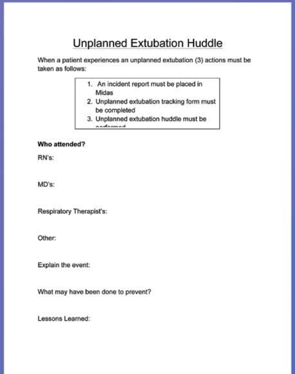
MIAMI CHILDREN'S HOSPITAL

EVENT TRACKING FORM

Report Date:______________ Report Time:______________

Patient Name:	MR# ACCT#	DOB: Gender: ☐ Male ☐ Female
Diagnosis:	Location: ☐ PICU ☐ CVICU ☐ NICU ☐ Other	
Admission: Date: Time:	Date/time of day of unplanned extubation/dislodgement	Date: Time:
☐ ETT ☐ Trach ☐ A-line ☐ CVL ☐ PICC ☐ GT ☐ Ventriculostomy ☐ Chest tube ☐ Other		
How taped: ☐ Secured ☐ Loose ☐ Re-taped (date/time) Is Neobar used: ☐ Yes ☐ No		
Medications:	☐ Fentanyl ☐ Norcuron ☐ Ativan ☐ Versed ☐ Other (specify) ☐ Continuous ☐ Bolus	
Time of last dose of medication		
Patient acuity (1:1 vs 1:2 or 2:1)		
Location of Patient in relation to RN's other Patients	Patient Room #	Other Patient Room #s:
Restraints?	☐ Yes ☐ No ☐ Ordered but not in use Documentation complete ☐ Yes ☐ No	
Planned extubation anticipated	☐ Yes ☐ No	
RN assigned to Patient	Respiratory Therapist assigned to patient	
Check any or all of the following conditions that may have existed immediately prior to or at the time of unplanned extubation	☐ Patient was agitated ☐ Patient was being transported ☐ Patient has order to hold sedation ☐ RN not at the bedside ☐ RN not in the room, someone is temporarily observing the patient ☐ RN/RT suctioning ☐ RN weighing/bathing patient ☐ RN requested additional sedation ☐ Tape is loose, wet or otherwise compromised ☐ In process of re-taping ETT/lines ☐ ETT taped from other hospital ☐ X-ray was being done ☐ Other procedures were being done ☐ Parent/visitor at bedside	
Outcome:	☐ re-intubated ☐ CPR ☐ other	

CONFIDENTIAL: COMPLETE AND PLACE IN DISLODGEMENT BINDER



Unplanned Extubation Huddle

When a patient experiences an unplanned extubation (3) actions must be taken as follows:

1. An incident report must be placed in Midas
2. Unplanned extubation tracking form must be completed
3. Unplanned extubation huddle must be performed

Who attended?

RN's:

MD's:

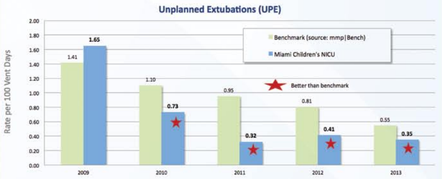
Respiratory Therapist's:

Other:

Explain the event:

What may have been done to prevent?

Lessons Learned:



Conclusion

In 2009, before implementing the above processes our ventilator rate was 1.65 per 100 ventilator days. After one year of implementation in 2010, our ventilator rate was 0.73 per 100 ventilator days. Currently for 2013, our ventilator rate was 0.35 per 100 ventilator days. We have been below benchmark since 2010, meeting our goal and maintaining it for four years. This quality improvement project has had a major impact on patients and their families, costs and outcomes.

References

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