

Title: Continued Process Improvement in Decreasing NICU Unplanned Extubations (UE's)

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Introduction: Vidant Medical Center (VMC) is Vidant Health's flagship hospital and the regional center for high-risk mothers and infants for eastern North Carolina. The Neonatal Intensive Care Unit (NICU) is a 50 bed Level III and IV Neonatal Intensive Care Unit.

Background: NICU UE's are an ongoing quality measure at VMC. The VMC NICU has a target level of < 1UE per 100 intubated days. In Dec 2011 our unplanned extubation rate rose to 4.39. An interdisciplinary discussion took place in Jan, 2012 and a Focus group was formed.

Factors involved in each UE were determined and stepwise improvements were initiated. Raising interdisciplinary staff awareness that there is an increase in UE's was the first step that resulted in staff input and suggestions. Our initial methodology was to re-educate staff on correct use of neobar placement, increased leadership rounding with emphasis to monitor stability of the endotracheal tube (ETT), increased physician awareness, and increased reporting of UE events through Patient Safety Network (PSN). Additional support equipment for stabilizing the ETT was added as well as a product change to infant swaddlers. Additionally, nursing to administer medication (if ordered) prior to doing assessments with enough time for the medication to prevent agitation

Objective: Continue to reduce the number of UE's to improve patient outcomes and reach target level of < 1 per 100 device days.

Methods: Maintaining previous process improvement steps achieved since initiation of Focus group meetings.

Another possible change that has played a role in the decrease in UE's is the awareness and attempt to use noninvasive ventilation rather than proceed directly to intubation and to extubate patients sooner.

Results: The average UE rate for Fiscal Year (FY) 2012 Oct-July was 3.12 (62 UE's / 1908 device days). The average UE rate for FY 2013 Oct – July is 1.44 (24 UE's / 1810 device days). A 61 % decrease in the number of unplanned extubations and a 54 % decrease in the UE rate. Data calculations are rates (total number of UE's divided by 100 ventilator days)

Conclusion: Involvement of all disciplines caring for our infants is crucial in the management of preventing unplanned extubations. Continued vigilance of staff, education, attention to support of the ETT, increased RCP presence at the bedside, earlier extubations and striving to use NIV rather than vent support have all led to continued improvement.