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

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Quality Improvement Abstract Title

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IRB Number (if applicable): Not applicable

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

Due to our unit's high unplanned extubations rate, we decided to make a video that standardized the ETT taping and re-taping technique in our NICU. I directed, edited the video. I also worked on converting this into a Cornerstone module, I formulated the questions for a quiz to follow the video in the module, I also identified and emailed individuals that were assigned the module, tracked its completion as well. I attended the meetings often to help identify other ways and areas in which we could improve and decrease our Unplanned Extubation rate. I also participated in "No UPE November" and worked to create a culture of safety in our unit.

Problem Statement/Question, Background/Project Intent (Aim Statement), Methods (include PDSA cycles), Results, Conclusions limited to 500 words

Problem Statement/Question:

Decrease the UPE rate from 1.8 to less than 1.0/100 vent days by December 2018 in a Level IV NICU.

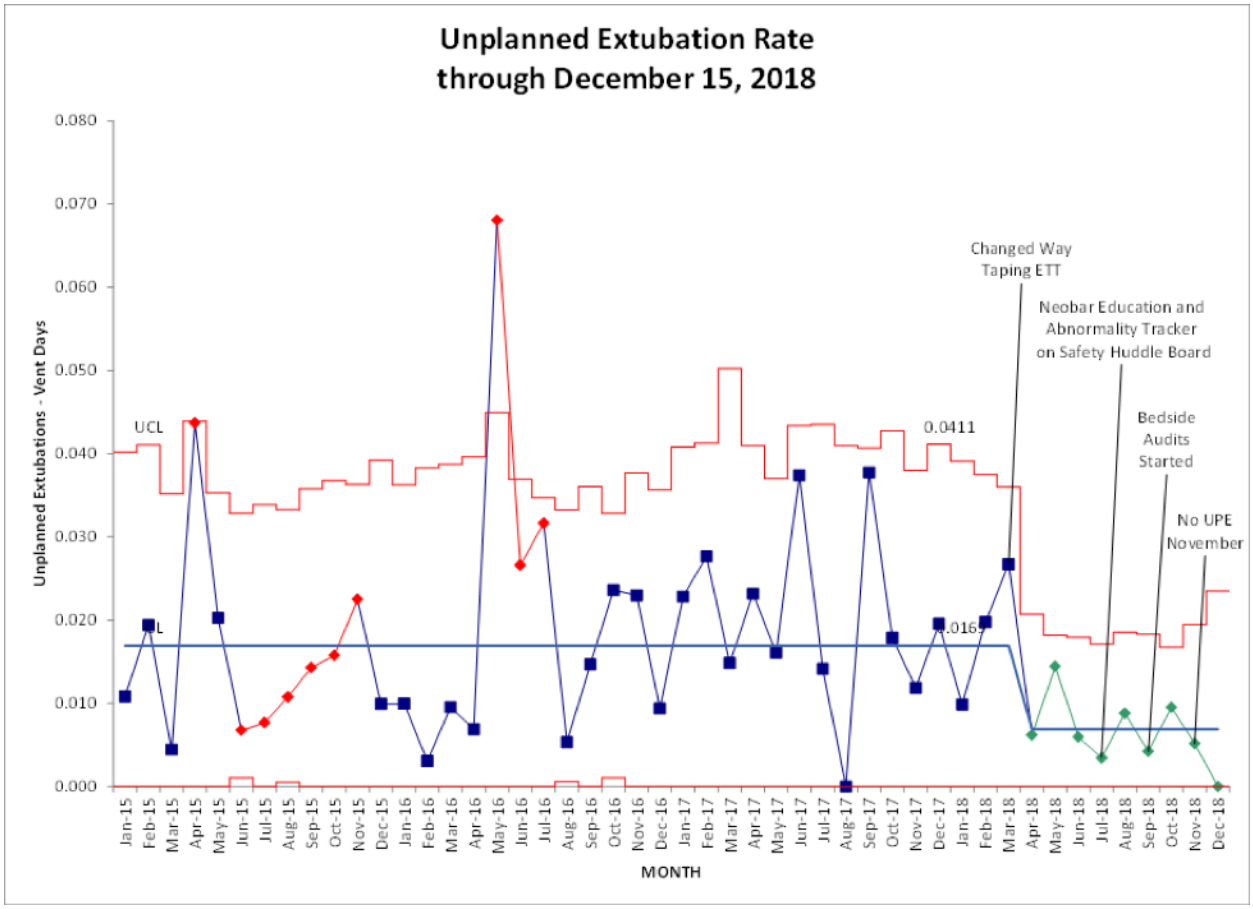
Background/Project Intent (Aim Statement): Unplanned extubation (UPE) is associated with cardiorespiratory decompensation, intraventricular hemorrhage, soft tissue trauma, subglottic stenosis, and increased ventilator days. UPEs should be monitored in every Neonatal Intensive Care Unit (NICU) and efforts must be made to eliminate them.

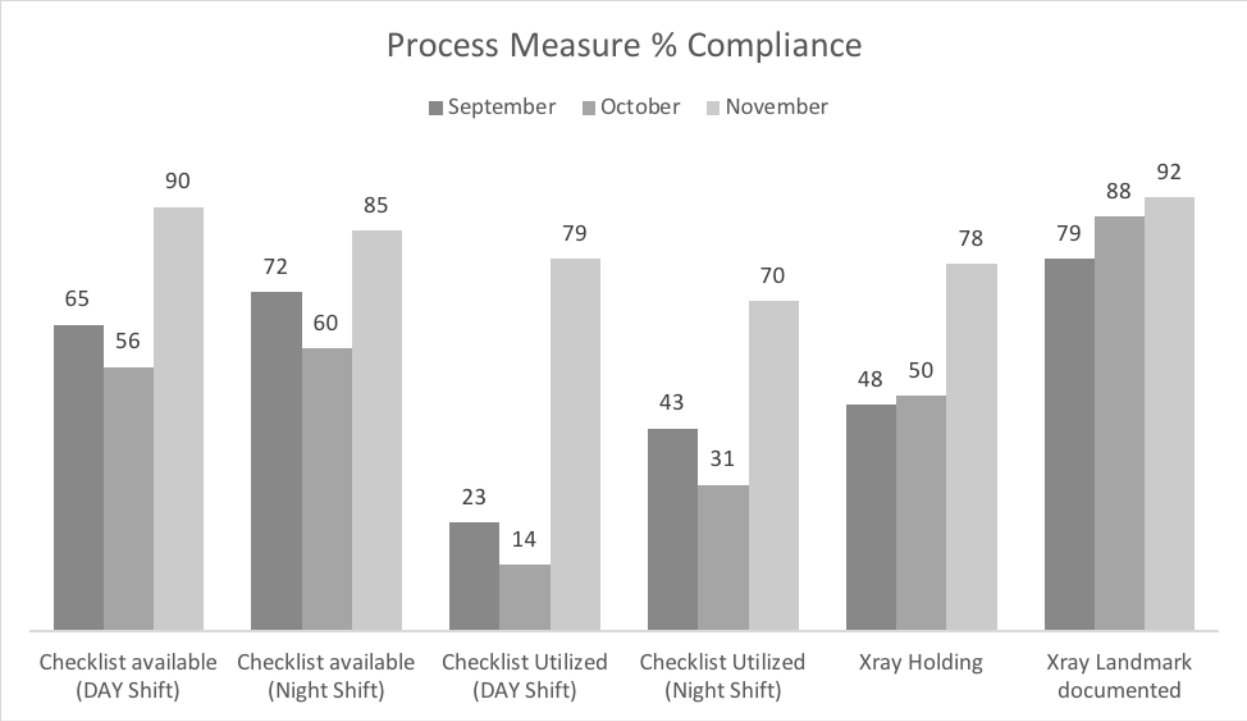
Methods (include PDSA cycles): Data from root cause analysis was used by an interdisciplinary group of stakeholders to identify improvement opportunities. Inadequate endotracheal tube (ETT)

device securement (improper device sizing or adherence and slipping of the tube in the tape) was a primary factor. In March 2018, we implemented a new method of securement. We soon realized that with over 500 staff involved in managing the ETT, there were gaps in awareness and education. An educational video aimed at standardizing taping and re-taping technique was developed. Additional interventions included: defining team roles during taping, bedside ETT rounding checklists; algorithm to guide ETT manipulation, guidelines for documentation and holding during Xray, and discussion of UPE rates during unit wide safety huddles. "No UPE November" was used to promote a culture of safety and increase team member's awareness of practices. Roll out of the educational video, weekly educational emails, and "just in time" training reinforced the no UPE tool kit components. Process measures focused on compliance with interventions.

Results: A decrease in the UPE rate to less than 1.0/100 vent days was achieved by December 2018. During "No UPE November" compliance with all process measures increased including the availability and utilization of the bedside ETT checklist, holding patient and documentation of ETT landmark during Xray. A total of 451/550 (82%) people completed the educational module and quiz.

Conclusions: UPEs can be a never event. An interdisciplinary leadership group identified several areas of improvement and engaged all members of the health care team to own the solution. "No UPE November" promoted increased awareness and team ownership of the unit's UPE goal. Through ensuring access to resources, standardizing taping methods, and encouraging a culture of safety we successfully lowered our UPE rate.




Process Measure % Compliance
September
October
November
65
56
90
72
60
85
23
14
79
43
31
70
48
50
78
79
88
92
Checklist available (DAY Shift)
Checklist available (Night Shift)
Checklist Utilized (DAY Shift)
Checklist Utilized (Night Shift)
Xray Holding
Xray Landmark documented