Getting to Zero: Eliminating Unplanned Extubations in the PICU

Overview
In Ochsner Hospital for Children’s pediatric intensive care unit (PICU), unplanned extubations (UE) were occurring with such regularity that many staff treated them like an expected potential complication. Over a two-year period, patients experienced 34 reported UE events. The hospital set out to reduce this serious event, which is the dislodgement of the endotracheal tube during any time other than when deliberately removed by staff. In addition to the risk of causing hypoxia, infection, airway trauma, prolonged mechanical ventilation and length of stay, UE is extremely costly for the hospital and patient.

Objective
Reduce UE from 1.4 to 0.7 per 100 ventilator days in the first year, eliminating UE in the PICU thereafter.

Methods
Using several cycles of Plan-Do-Study-Act (PDSA) methodology, interventions were implemented and tested over the course of three years. Breakdowns in securing endotracheal tubes were identified, and the hospital adjusted training and protocol accordingly. Retrospective data was pulled from the adverse events reporting system and used to track the UE rates pre and post implementation of evidence-based interventions.

Key Drivers
- Identify breakdowns in training and application
- Utilize EMRs with the modified Ramsay score to evaluate patient comfort levels
- Determine best practices for taping procedures
- Establish individuals that serve as bedside experts
- Revisit tools used to secure endotracheal tubes

Lessons Learned
This project demonstrated that the process for making change cannot be rushed, and hands-on experience for leadership and staff led to lasting change.
- Stakeholders were involved in every step of the process, including testing potential solutions, which led to unity in the plan of action.
- Quality training for staff included daily rounding and education during real-time scenarios and helped achieve the end goal.
- Quality control is critical and allows all staff, as opposed to solely the clinical coordinator, to feel comfortable participating in quality control.

Improved outcomes
- $240k savings to hospital
- 43 fewer unnecessary hospital days

“This quality leader has done an excellent job of documenting an organic process, measuring significant outcomes and monitoring improvement along the way. The project demonstrates the power of frontline teams and persistence.”

—2017 PQA judge

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