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Chasing Never: Unplanned Extubation

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UMKC School of Medicine

BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2017-18

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

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Strategic Goal Alignment

 **Demonstrate Quality Outcomes** Demonstrate quality, safety and clinical effectiveness.	 **Improve Performance** Improve processes, increase capacity for innovation and service excellence, and strengthen our financial position.	 **Strengthen Market Position** Strengthen Children's Mercy's market position in the Metro area, region, and beyond.	 **Deliver Value** Deliver value, expertise, and efficiency through an integrated pediatric health system.	 **Elevate Academic Profile** Enhance the research capabilities and accomplishments of CMH and strengthen the quality of the educational experiences.

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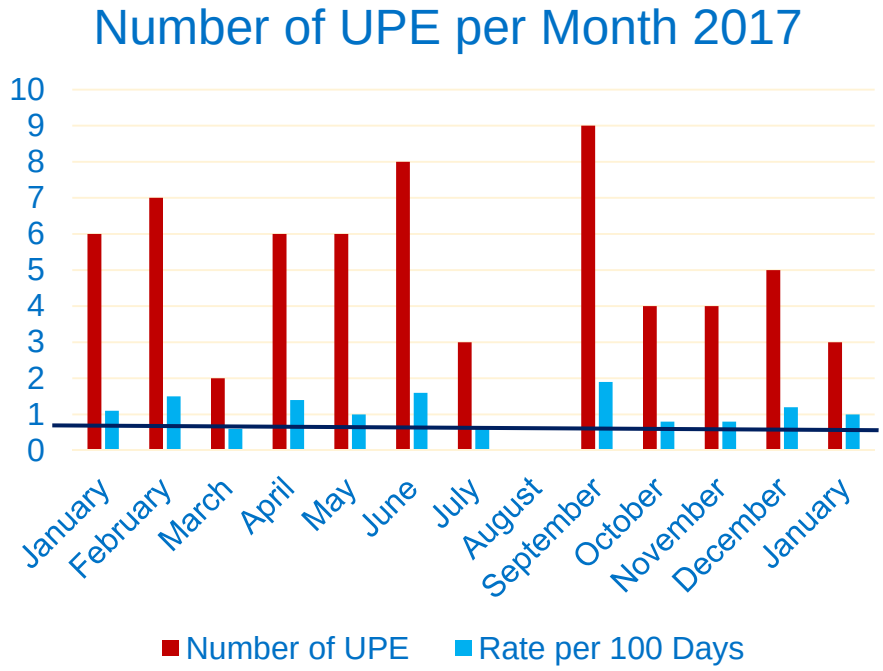
Background

Graduate Nurse Residents and Knowledge Translation Scholars have been collaborating with intra-disciplinary leaders in an 84 bed, level 4, neonatal, intensive care unit in to decrease the rate of unplanned extubations (UPE) since 2015 using quality improvement methodology. Despite previous efforts, the unit has not yet met its benchmark for the UPE rate (0.8 per 100 vent days). The evidence suggests that there is a great deal of variance in definitions and reporting related to UPE. Identification and standardization of potentially better practices for nursing care of intubated patients will be required to make UPE a “never-event.”

Background

- The goal is to decrease the rate of unplanned extubations in the ICN from 1.38 per 100 ventilator days in 2016 to 1 event per 100 ventilator days in 2017.
- From January 2017 to January 2018 our rate varied from 0-1.9



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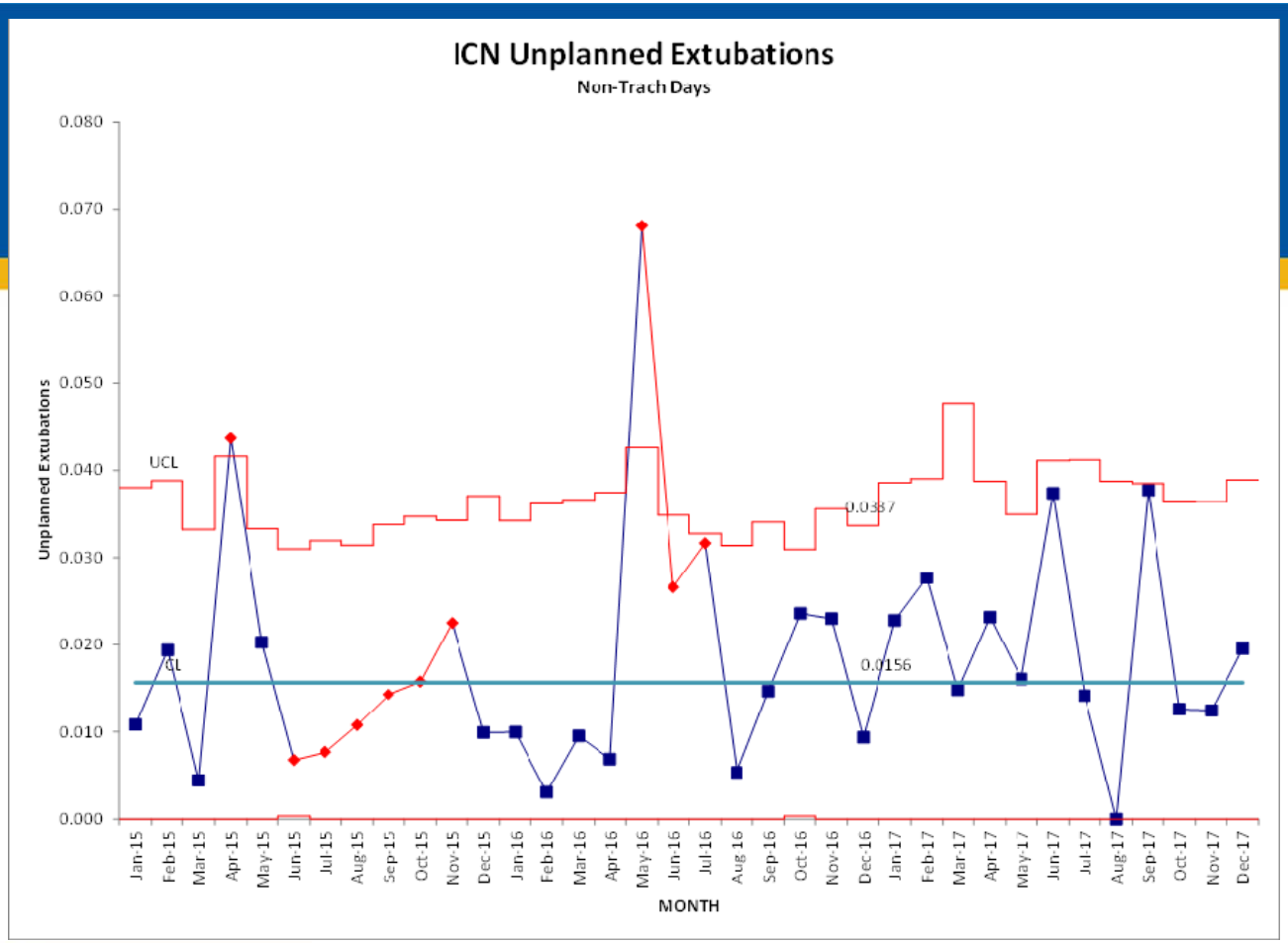

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PICO Question & Aim Statement

PICO Question

- P:In the Intubated neonate
- I: can the bundling of potentially best practice recommendations (tube location documentation, 2-person handling, and management of positioning and secretions) and standardized hourly assessment with documentation of compliance
- C: current standard of practice
- O: decreased unplanned extubations

Aim Statement

- Decrease the rate of unplanned extubations in the ICN from 1.38/100 ventilator days in 2016 to 1 event/100 ventilator days in 2017.

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The Big Picture: UPE as an adverse event

- NICU infants are at high risk for adverse events
- Adverse events occur in 4/10 intubations
- Odds double with number of intubation attempts
- Odds of an adverse event are quadrupled when the procedure is emergent
- Most common cause of emergent intubation is UPE

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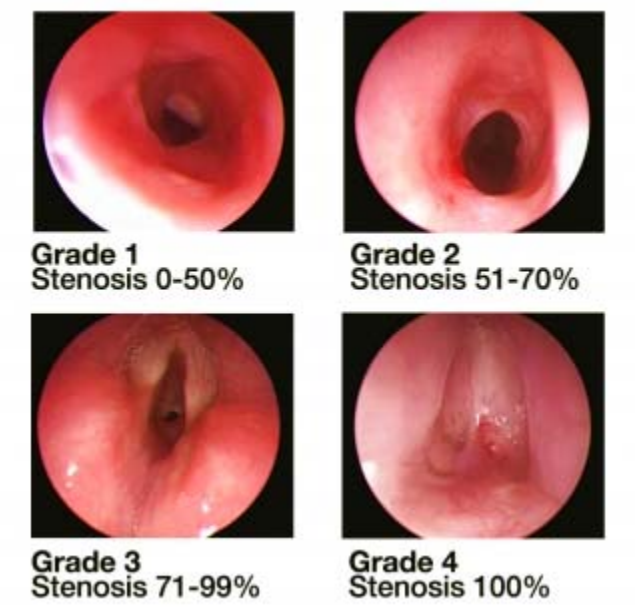
Direct Airway Trauma:

an example of a UPE-associated adverse event

Risks for developing laryngotracheal stenosis

- Higher number of vent days
- Higher number of intubations
- Higher number of attempts
- Infection



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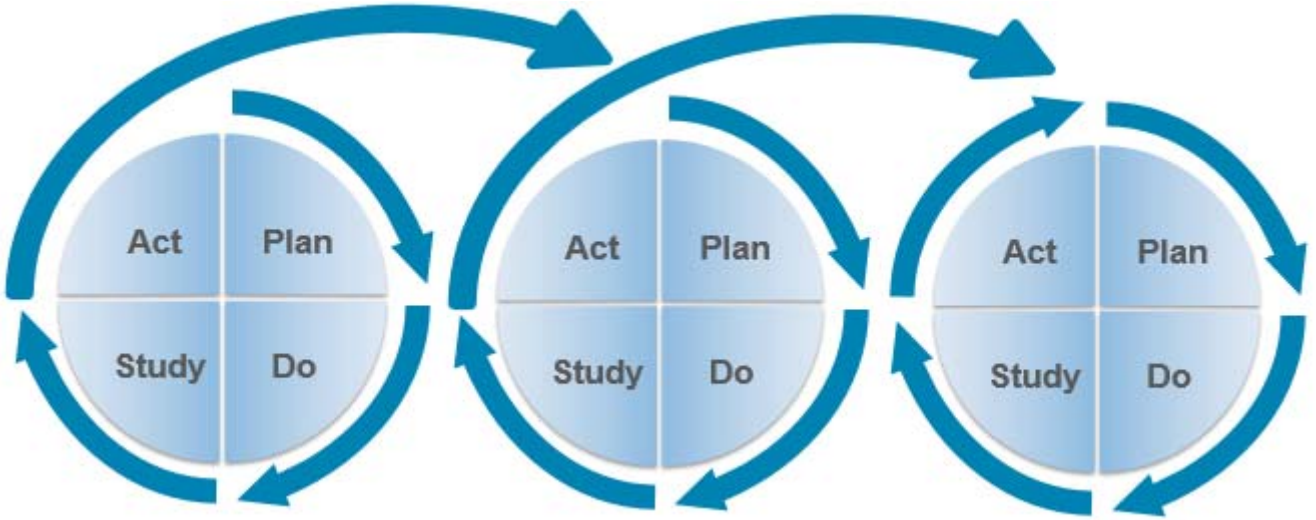
PDSA's Implemented



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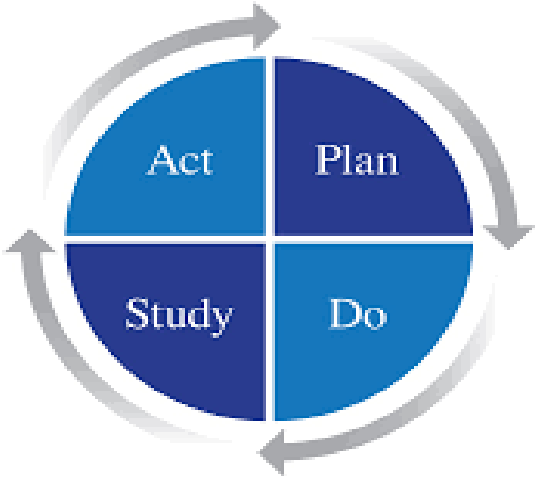
PDSA's Implemented: 1



Eight NLNs and 2 KT Scholars attempted to increase frequency of ETT position documentation to hourly on their intubated patients for 1 month. Self-reported compliance was poor. Discussed reasons related to ease of use within the EMR. Proposed changes to EMR/documentation standard

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Implementation

- Increase frequency of ET tube assessment
- Align with UPE Taskforce checklist for potentially better practices
- Cerner checklist for nurse documentation
  - Hourly assessment
  - Supportive positioning
  - Securement method intact
  - Ventilator tubing stabilization
  - Secretions managed

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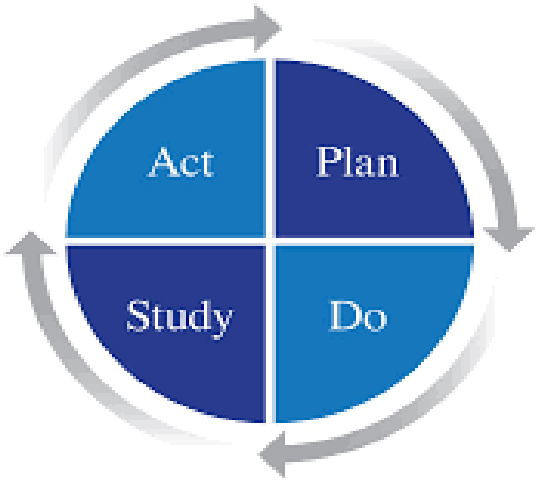
PDSA's Implemented: 2



Re-brand interventions to decrease UPEs in a cohesive bundle, reinforce education. Meet with Stakeholders (PICU educators, UPE Taskforce leaders) to discuss conditional fields for hourly assessment of intubated pts. Learned process for changes to PHRED. Initiated by Tara Otterson, RN. Go Live for new documentation standard is Nov 1st.

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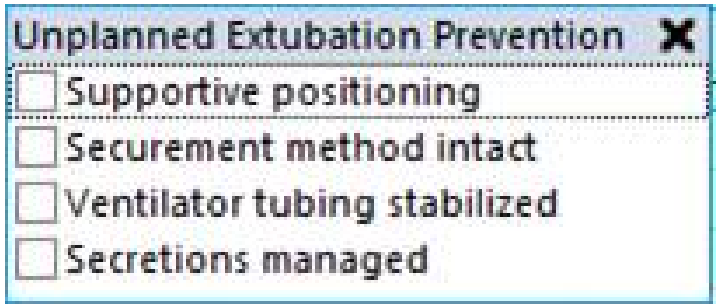
At least as important as a PIV…

Oximetry Site		
FiO2	%	37
Oxygen Flow Rate	L/min	
Delivery Device Oxygen		Ventilator
VAP Prevention		Reverse T...
Ventilator Circuit Condition/Care		Condens...
Unplanned Extubation Prevention		Supporti...

- A dropdown assessment for endotracheal tube patients has been added.
- Conditions that prevent UPE should be documented hourly.
- There are less than 15 patients with ET tube on any given day in the ICN.



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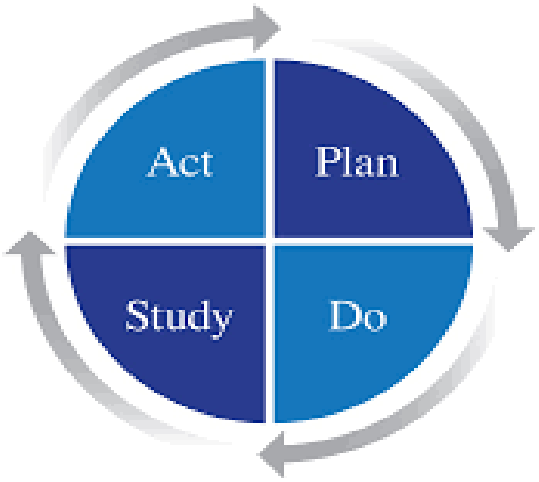
PDSA's Implemented: 3



Provide staff education on bundle elements (positioning, securement, vent tubing, secretion management), risk factors for UPE and long term consequences of UPEs. Create education plan. Presented at November 2017 ICN Update, reinforced with newsletter, and provide Just in Time Training in December 2017.

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ICN Case Study

- Twin A, born at 25 3/7 weeks and 630g
- “Multiple” intubation attempts in the Delivery Room
- HUS WNL, no PDA
- Infections x3 (oomphalitis at 1wk, pneumonia at 1mo, NEC at 2mo)
- “Trials of extubation” failed x 8 with 5 UPEs
- Each reintubation required multiple attempts
- Vocal cords bleeding/swollen with attempts, despite steroids
- Transferred at 37 weeks for airway evaluation, twin at home

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ICN Case Study

- Microlaryngoscopy and tracheostomy at 40 weeks
- Blunted carina, evidence of trauma,
- Large amount of granulation tissue, tracheomalacia
- Ongoing problems with trach changes, difficult cannulation and bleeding delayed discharge
- Microlaryngoscopy and stoma revision at 52 weeks
- Found Grade 3 subglottic stenosis, scarring

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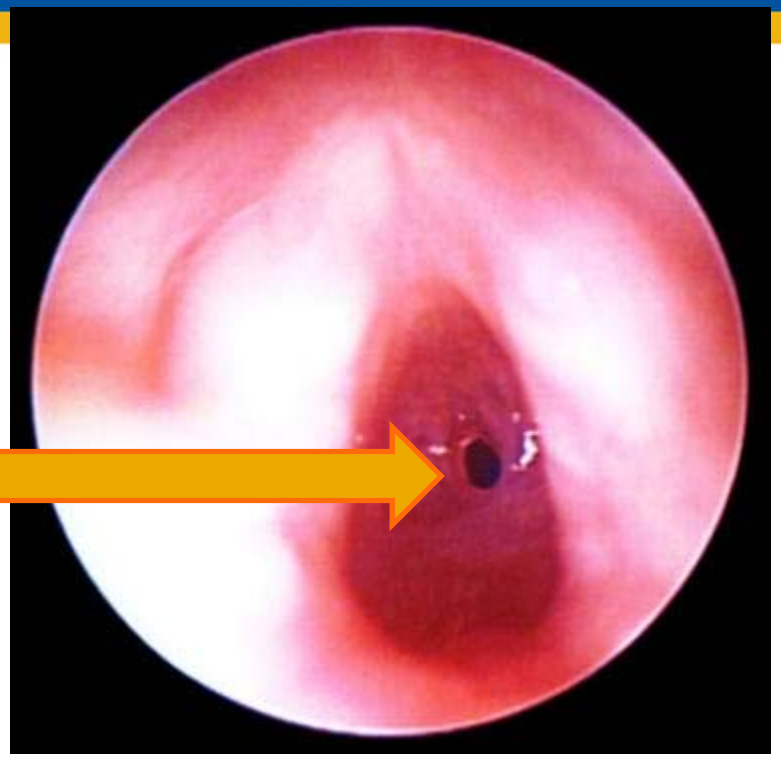
Grade 3 Subglottic Stenosis

The lumen of the airway is 70% or more occluded.



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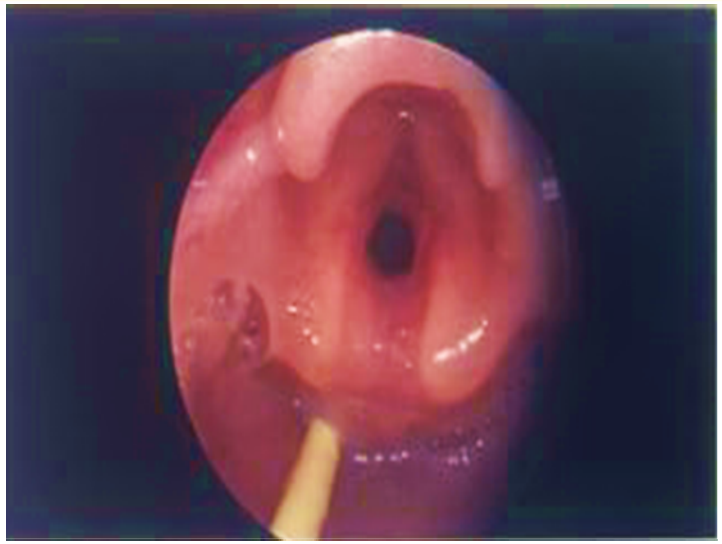
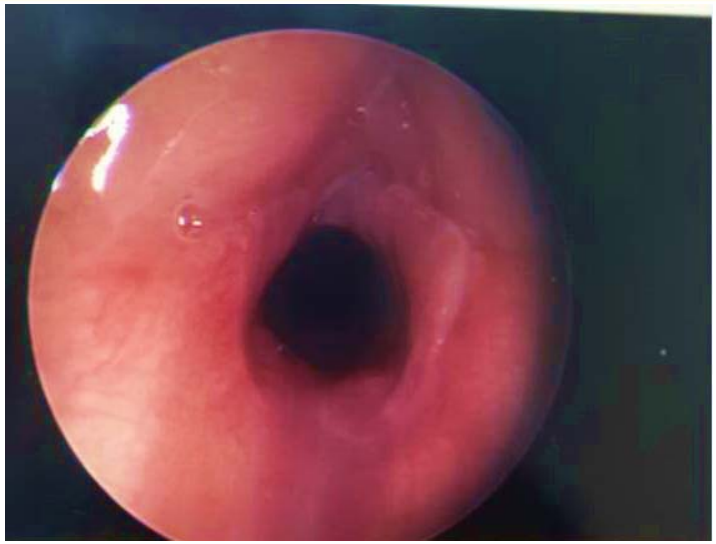
Case Images



Pre-Procedural



Post-Procedural

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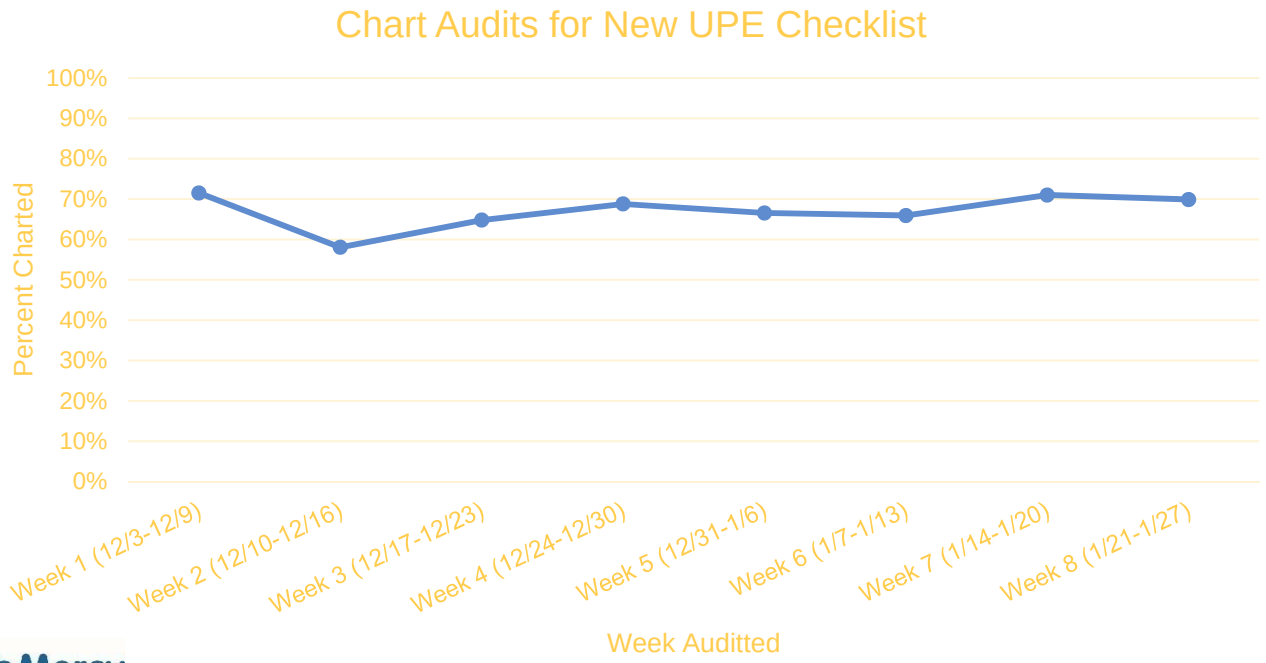
Project Outcomes



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Barriers/Lessons Learned

- Just in Time Training (JITT)
  - Resistance to change
  - Additional workload
- Case study was most valuable education
- Consistency to practice among disciplines
  - Purpose of standardization
- Team participation/Root cause analysis
  - UPE debriefing

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Pediatric Nursing Implications

- Nurses are responsible to do their part to decrease adverse outcomes

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Conclusion

- The benefits of having small groups working on this topic
  - Keeping UPE interventions in everyone's minds
  - Maintaining staff engagement
  - Provision of re-education
  - New ideas and inspiration
  - Generation of quality data over time

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Questions

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