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Educating Providers: Timely post-operative pain management in a Level IV Neonatal Intensive Care Unit (NICU)

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Educating Providers: Timely post-operative pain management in a Level IV Neonatal Intensive Care Unit

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Background

- NICU patients often encounter painful procedures and can have significant short and long-term consequences from inadequately treated pain.
- Adequate pharmacological pain management while minimizing risks is paramount.
- Our participation in the CHNC CIQI collaborative "Erase Pain" to improve management of post-op pain in neonates, provided the infrastructure to introduce an institutional QI project

SMART Aim

Increase the percentage of patients receiving acetaminophen within one hour after surgery to greater than 70% by July 2020.

Design

- Standardization: multidisciplinary team developed pain treatment algorithms (Fig. 1) and postop order plans (Fig. 2)
- Physician, NNP and RN education through mandatory educational sessions and newsletter
- Process measures included compliance with the use algorithm and order plan.
- Baseline Period: Jan-Jul 2019**
- Project Period: Aug 2019-Aug 2020**

Improvement Team

Neonatologists, NICU Fellow, NICU pharmacist, NNPs, anesthesiologists, RNs, nurse educators, bedside nurses, QI project managers and coordinators.

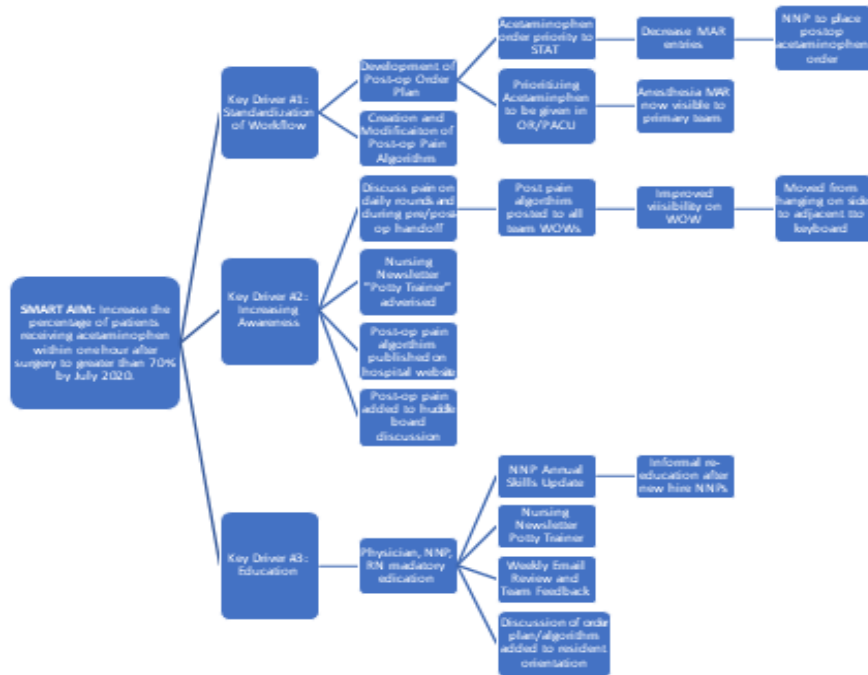
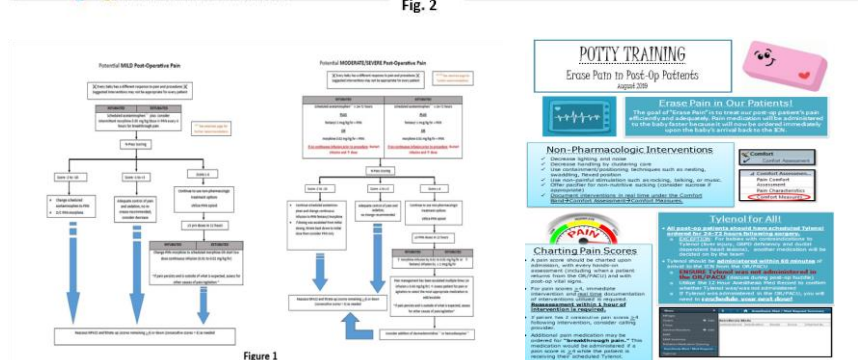


Fig. 2

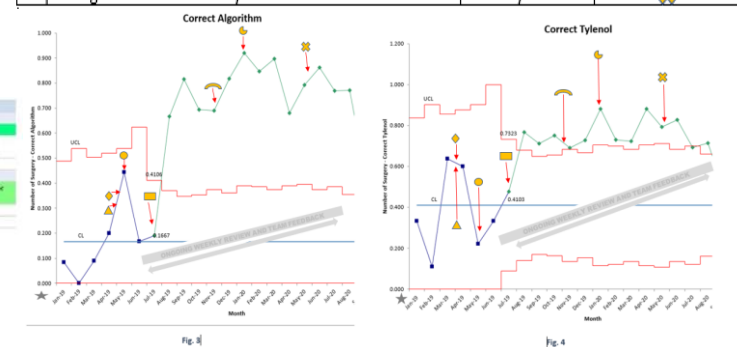
Medication	Indication	Dose
Acetaminophen	Mild Post-Operative Pain	10 mg/kg IV, q6hr, 48 hr (a). Restricted to patients during immediate post-operative period OR/NPO patients in whom NSAIDs and rectal administration are contraindicated. Orders should have a maximum 48 hour stop date for the agent.
Morphine	Moderate to Severe Post-Operative Pain	0.05 mg/kg IV, q4hr, Breakthrough Pain



Results

- Provider compliance with the algorithm improved from a baseline of 16.7% of patients before education to 77.3% after intervention.
- Acetaminophen administration within the 1st hour postop improved from a baseline of 41% to 74.7%.
- The percentage of patients receiving acetaminophen within the 1st hour post op was greater than 70% by July 2020

Key Drivers and Interventions	Date	Legend Symbol
Historical Intervention: Pain treatment algorithm developed	2017	★
Post-op Ordering Plan developed	April 2019	▲
Increased Accessibility of Pain Treatment algorithm	April 2019	◆
Modification of Postoperative Handoff Form	May 2019	●
Pre-Launch Education, Increasing Awareness	July 2019	■
Prioritizing Acetaminophen Administration in OR/PACU	November 2019	☾
Increasing Access and Global Awareness	January 2020	☽
Improving Workflow Efficiency	May 2020	✕



Conclusions

- Educating providers about the importance of discussing postop pain and administering multimodal analgesia is effective in improving ordering practices and timely acetaminophen administration.
- Use of a postop pain algorithm reduces opiate exposure, which was monitored as a balancing measure.