

BACKGROUND

Children with cleft lip and/or palate (CLP) undergo multiple surgeries throughout childhood, including lip and palate repair, iliac bone graft surgery, and palatal revision surgeries to address speech dysfunction. Patients face repeated exposure to opioids to manage postoperative pain. Clinically, the use of opioids can contribute to side effects that impact recovery, including sedation, nausea/vomiting, constipation, poor oral intake, and respiratory depression, which can impact length of stay, return to activity/school, and the patient experience. This multidisciplinary QI project focused on identifying strategies that would effectively manage pain and reduce postoperative opioid use in children undergoing cleft surgeries.

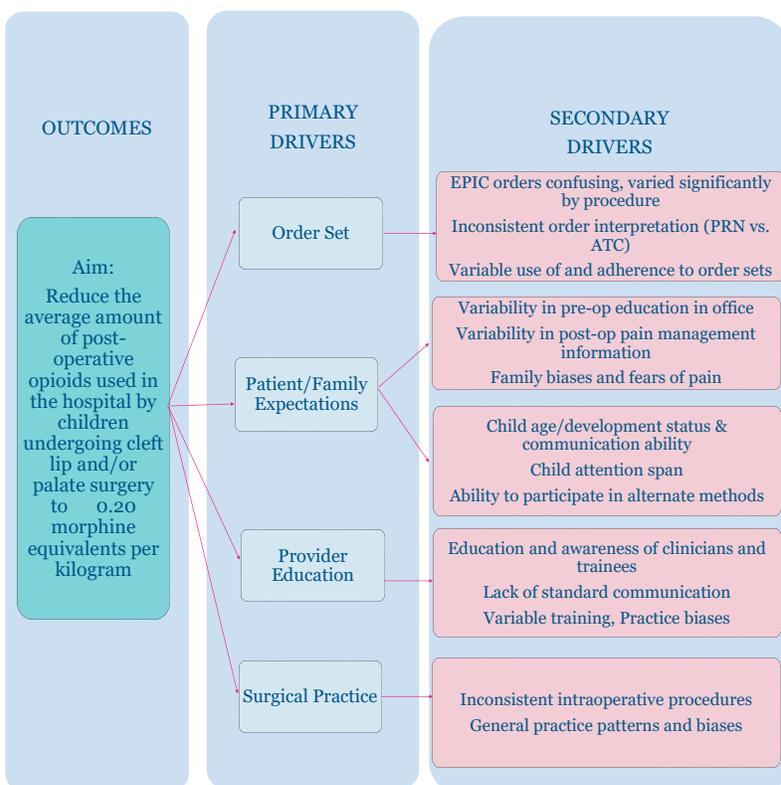
SMART Aim

Reduce the average amount of post-operative opioids to children undergoing cleft lip and/or palate surgery to 0.20 morphine equivalents per kilogram

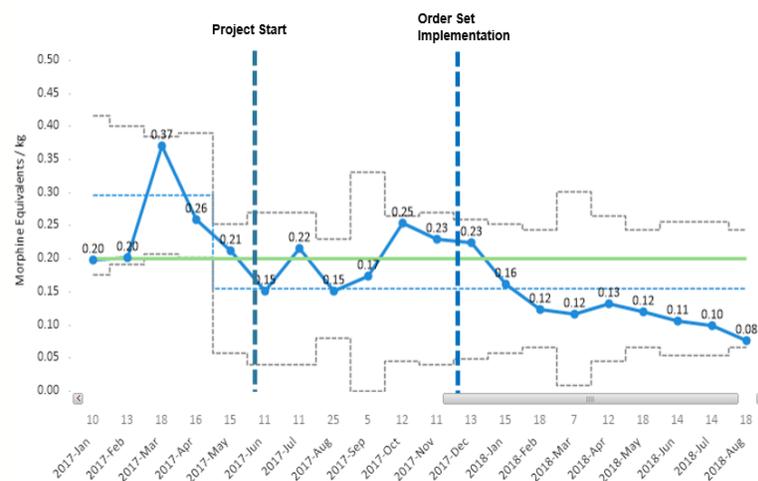
INTERVENTIONS

	PRE-QI Protocol	POST-QI Protocol
Communication & Education	<ul style="list-style-type: none"> a. Differences among surgeons' pain protocols b. Residents, nurses not aware of attempt to reduce opioid use c. Postoperative units not aware of intra-operative nerve block administration d. Families had inconsistent understanding of opioid indications and risks, expressed anxiety in anticipation of child's pain 	<ul style="list-style-type: none"> a. Provided live and video in-service education explaining initiative to clinical providers b. Created clear EPIC order sets for each surgery and deleted old ones c. Nerve block recorded in EPIC with expected effect time d. Provided in-office patient/family education on opioid risks, expectations for postoperative recovery and return to activity, alternative pain management strategies
Intra-Operative Pain Management	<ul style="list-style-type: none"> a. Inconsistent nerve block administration b. Inconsistent coordination with anesthesiology regarding minimizing opioid administration 	<ul style="list-style-type: none"> a. Surgeon/Anesthesiologist consensus to administer bupivacaine nerve blocks b. Anesthesiology prioritizing IV dexamethasone and IV acetaminophen
Post-Operative Pain Management	<ul style="list-style-type: none"> a. Single post-op order set with multiple options for pain management, varied by provider and procedure b. Opioids often ordered as first-line c. Non-narcotic options not prioritized d. Opioids administered based on nursing assessment of pain e. Caregivers anxious about child's pain 	<ul style="list-style-type: none"> a. Order set for each type of surgery, used by all cleft surgeons consistently; Zofran added to standard order set b. First-line: Around the clock acetaminophen (q4) and ibuprofen (q6) c. Opioids (q6) given PRN for moderate to severe breakthrough pain d. Alternative pain strategies used (e.g., distraction, relaxation, hot/cold packs) e. Patient/family knows what to expect

KEY DRIVERS



Average Morphine Equivalents per kg Given Post-Op



OUTCOMES

Average total opioid use was reduced to 0.20 morphine equivalents per kilogram or less. This represents a 22.1% reduction of total opioids administered. There was 100% compliance with use of the standard EMR (EPIC) order set following implementation. Patient satisfaction data were limited, but trends indicate maintenance of 100% top box responses.