

Implementation of a Standardized Pain Management Protocol Reducing the Rate of Postoperative Complications in Children Undergoing a Tonsillectomy



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Background

- Over 500,000 tonsillectomies performed annually in the United States¹
- Pain management for children undergoing a tonsillectomy varies widely among providers, often leading to potentially avoidable postoperative complications (pain, respiratory depression, and bleeding)²

Purpose and Aims

- To evaluate the efficacy of a standardized pain management protocol in decreasing postoperative pain and respiratory complications among children undergoing tonsillectomy.
- **Aim 1:** Evaluate the impact of a standardized pain management protocol on reducing postoperative pain medication administration
- **Aim 2:** Determine the impact of a standardized pain management protocol on reducing the rate of postoperative respiratory interventions
- **Aim 3:** Determine the rate of adherence to a standardized pain management protocol
- **Aim 4:** Assess the usability of a standardized pain management protocol

Methods

- **Design:** Pre-post Quasi-Experimental
- **Sample:** Children undergoing tonsillectomy (1-18 years of age) and Anesthesia Providers
- **Sample Size:**
 - Pre-Implementation- 81
 - Post-Implementation-99
 - Usability- Anesthesia Providers-8
- **Data Collection:**
 - Medical chart review for no. of pain medication doses and respiratory interventions (Pre)
 - Qualtrics survey for no. of pain medications and protocol usability (post)
- **Data Analysis:** Descriptive Statistics and Chi-square tests

Intervention



Pain Management protocol for Children Undergoing a Tonsillectomy

Preoperative:

Patients will receive Acetaminophen 15 mg/ kg po prior to leaving the preoperative area (IV is acceptable, dose must be within 1 hour of procedure).

Intraoperative:

- 1) 0.5mg/kg to a max of 10mg of Dexamethasone.
- 2) 0.3--0.5 mcg/kg of Dexmedetomidine and 1 mg/ kg Lidocaine on induction.
- 3) 0.03--0.05 mg/kg of Morphine and an additional 0.3--0.5 mcg/kg of Dexmedetomidine on return of spontaneous ventilation.
- 4) 0.03--0.05 mg/kg of morphine and an additional 0.3--0.5 mcg/kg of Dexmedetomidine prior to leaving the Operating room (this can be based on respiratory rate, heart rate, and history of OSA).

Postoperative:

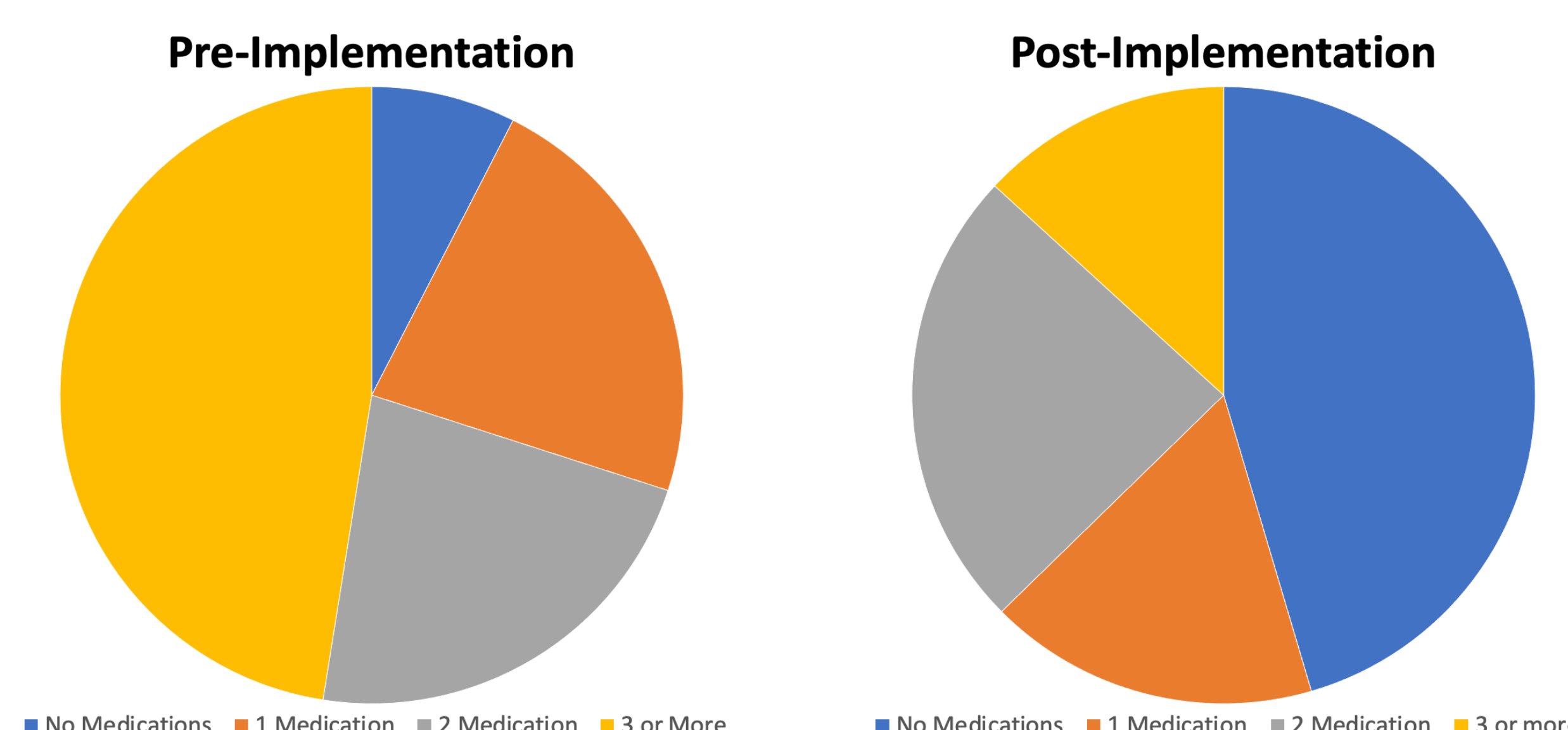
Postoperative order per your usual preference.

Results and Discussion

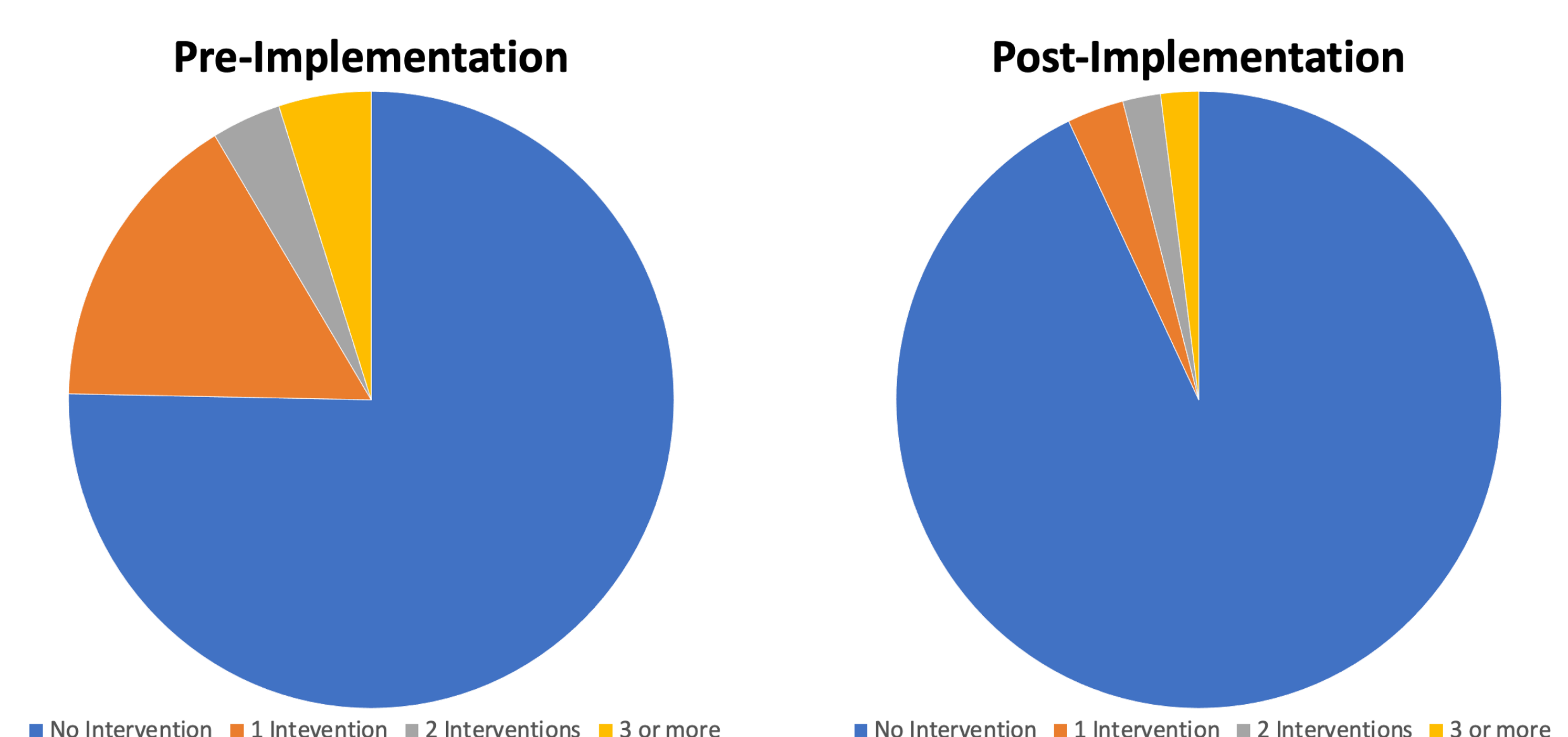
Clinical Impacts

- The use of a standardized pain management protocol significantly
 - Decreased the number of pain medication doses per child (P<.001)
 - Decreased the number of respiratory interventions per child (P= .008)
- There was a 100% adherence rate in using the protocol
- The providers gave the protocol a 4.75/5.00 score for usability

Number of Pain Medications Per Patient



Number of Respiratory Interventions Per Patient



Conclusion

- When anesthesia care is guided by a standardized pain management protocol, it can help reduce the number of pain medications and respiratory interventions required.

References

1. Amoils, M., Chang, K.W., Saynina, O., Wise, P.H., & Honkanen, A. (2016). Postoperative complications in pediatric tonsillectomy and adenoidectomy in ambulatory vs inpatient settings. *Otolaryngeal Head Neck Surg*, 142(4), 344-350
2. Guntinas-Lichius, O., Geibler, K., Koman, M., Schlattmann, P., & Meissner, M. (2016). Inter-hospital variability of postoperative pain after tonsillectomy: prospective registry-based multicenter cohort study. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154155>