



# **Opioid Prescribing Habits and Patient Post-Operative Pain Requirements after Common Pediatric Urology Procedures**

## **Are Pediatric Urologists Contributing to the Opioid Epidemic?**

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# Hypothesis and Study Aims

- Hypothesis
  - Opioids are overprescribed following common pediatric urology procedures
- Study Aims
  - Following common pediatric urology procedures:
    - Determine how many doses of opioids are required
    - Determine actual pain levels experienced by children
    - Predict factors leading to increased postoperative pain and an increased opioid requirement
    - Determine if there children who did not require opioids

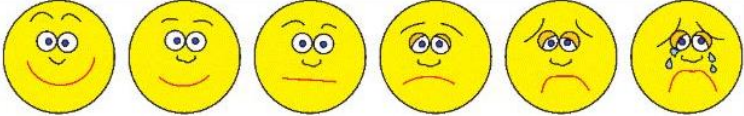
- Parents/patients recruited and consented at time of surgery
- Data recorded
  - Demographic information
  - Surgery performed
  - Number of doses of pain medication prescribed
    - Acetaminophen
    - Ibuprofen
    - Oxycodone
- Number of doses of pain medication not limited
- Pain medication prescribed at standard dosing and time intervals
  - Acetaminophen – 10 mg/kg every 6 hours as needed
  - Ibuprofen – 10 mg/kg every 4 hours as needed
  - Oxycodone 0.1 mg/kg every 4 hours as needed

- Text message with linked survey
  - Sent each evening for postoperative days 1-7
  - Data Recorded
    - Previous 24 hours
      - Number of doses of pain medication required
      - Average pain level – Faces Pain Scale
- Data stored in RedCap database
- Data analysis performed using
  - Cross tab and chi-squared analysis
  - Wilcoxon testing
  - Logistic regression model

Using the pain scale below, how would you rate your child's average pain level over the last 24 hours?

0  2  4  6  8  10 reset

**Pain Scale**



	No hurt	Hurts little bit	Hurts little more	Hurts even more	Hurts whole lot	Hurts worst
Alternative coding	0	2	4	6	8	10

**Brief word instructions.** Point to each face using the words to describe the pain intensity. Ask the child to choose the face that best describes child's own pain and record the appropriate number.

Over the last 24 hours, how many doses of oral Oxycodone did you need to give your child?

0  1  2  3  4  5  6  7  8  Other reset

Over the last 24 hours, how many doses of Acetaminophen (Tylenol) did you need to give your child?

0  1  2  3  4  5  6  7  8  Other reset

Over the last 24 hours, how many doses of Ibuprofen (Motrin) did you need to give your child?

0  1  2  3  4  5  6  7  8  Other reset

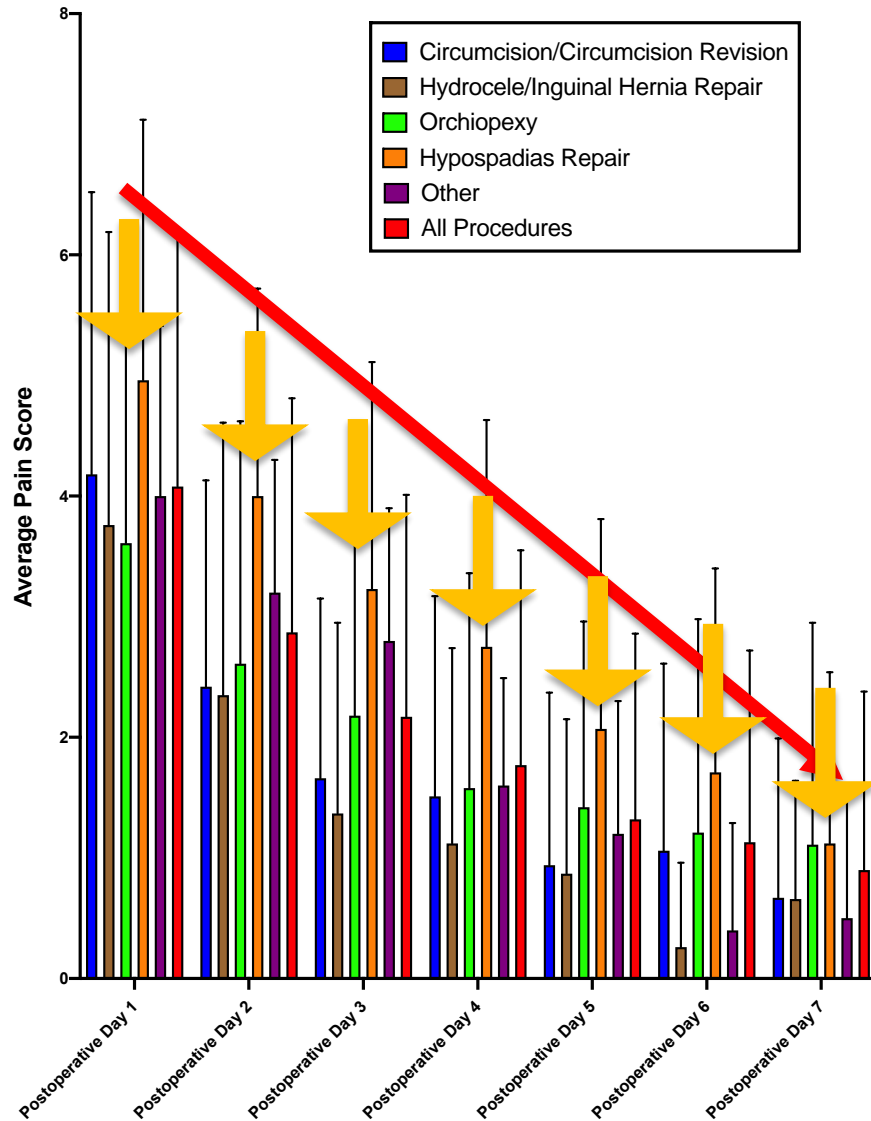
# Results



Number of Patients		137 patients
Average Patient Age		37 months (5 -199 months)
Number of Male Patients		134 (99%)
Number of Female Patients		3 (1%)
Parent Receiving the Text Message	Mother	134 (98%)
	Father	3 (2%)
Average Age of Parent Receiving the Text Message		31 years (20-46 years)
Insurance Type	Private	96 patients (70%)
	Public	26 patients (19%)
	Uninsured	15 patients (11%)
Type of Surgery Performed	Circumcision/Circumcision Revision	39 patients (29%)
	Hydrocele/Inguinal Hernia Repair	17 patients (12%)
	Orchiopexy	44 patients (32%)
	Hypospadias Repair	30 patients (22%)
	Other	7 patients (5%)



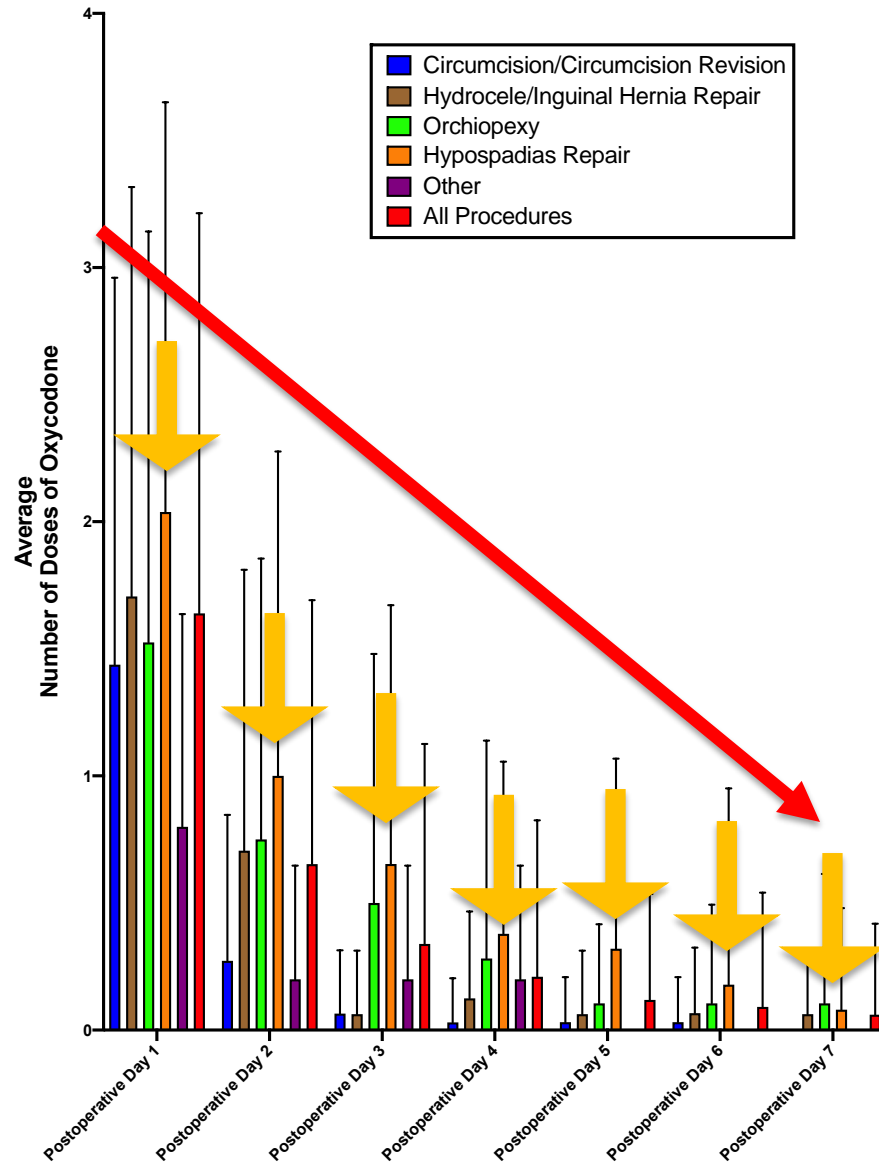
# Post-Operative Reported Pain



- For all procedures: Pain improved significantly ( $p < 0.01$ ) from POD 1 to 7
- Hypospadias repairs reported greatest degree of pain

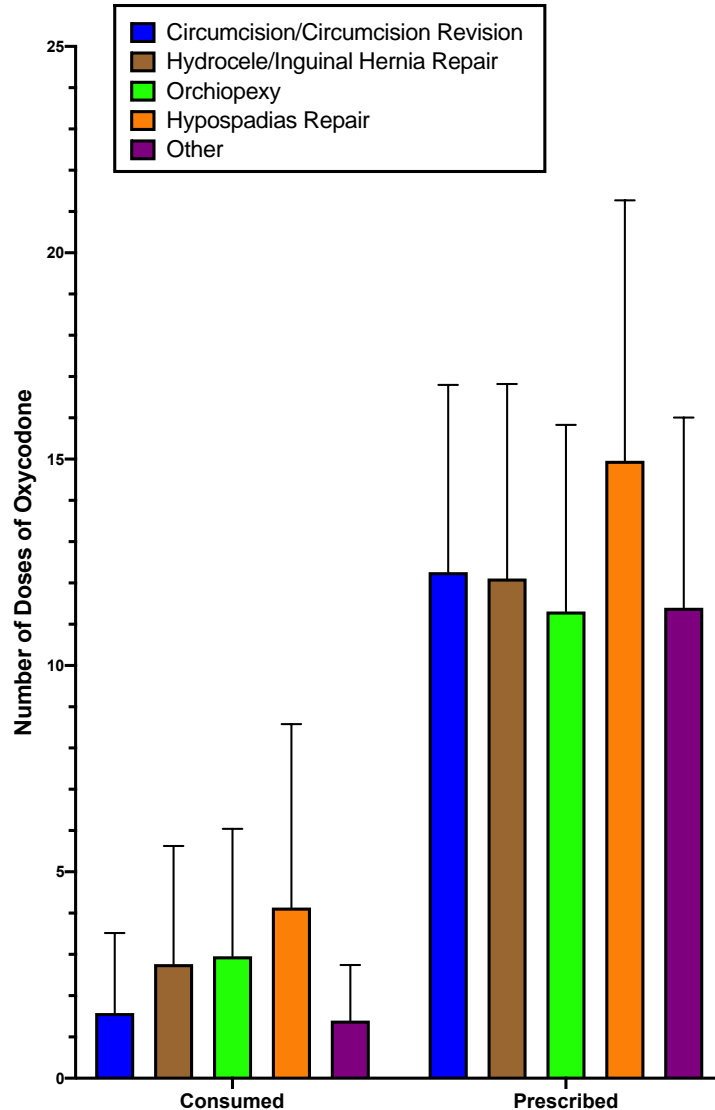


# Post-Operative Opioid Requirement



- For all procedures: Opioid requirement improved significantly ( $p < 0.05$ ) from POD 1 to 7
- Most opioid consumption occurred on POD 1
- Hypospadias repairs had greatest opioid requirement
- Multivariate analysis: No predictor leading to increased opioid requirement

# Did we overprescribe?



- Yes, opioids were overprescribed
  - Circumcision: Overprescribed by **88%**
  - Hydrocele/Hernia: Overprescribed by **77%**
  - Orchiopexy: Overprescribed by **74%**
  - Hypospadias Repair: Overprescribed by **72%**
  - Other surgeries: Overprescribed by **88%**



# Were there patients who did not require opioids?

Type of Surgery	Number of Patients not Requiring Opioid
Circumcision	19 patients (50%)
Hydrocele/Hernia	5 patients (29%)
Orchiopexy	15 patients (34%)
Hypospadias Repair	5 patients (17%)
Other	2 patients (40%)

- Circumcision: Greatest likelihood of not requiring any opioids
- Multivariate analysis: No predictor for not requiring opioid

# Conclusions

- Postoperative pain and opioid requirements improve over time after surgery
- Hypospadias repairs: Highest degree of pain and opioid requirement
- Opioids are overprescribed
- Some patients never required opioid
- Halting opioid use though is not warranted
- Future Work
  - Continue patient enrollment
  - Develop predictive model to improve and direct opioid prescribing