



# SAFE AND SOUND

## Pain Management

PRESCRIBING

### Discharge Opioid Prescribing Guidelines for Common Pediatric Surgical Procedures

Opioid overuse misuse has reached epidemic proportions in the United States and is considered the main driver of over 70,000 drug overdose deaths that occurred in 2017.<sup>1</sup>

Surgery is among the most common settings in which children are first exposed to opioids yet there are not pediatric national standards to provide guidance regarding the quantity of opioids to prescribe after surgery.<sup>2</sup>

Literature does show us that:

- Adolescents with low predicted risk of future opioid misuse who had received an opioid prescription were three times more likely to misuse opioids after high school.<sup>3</sup>
- The quantity of opioids prescribed is associated with higher patient-reported opioid consumption.<sup>4</sup>
- Pediatric providers frequently prescribe more opioid than needed to treat pain.
  - Monitto et al found that 58% of doses dispensed were not consumed after opioid therapy was no longer required to treat pain. Eighty-two percent of patients had more than 20% of their opioid prescription remaining and 53% had more than 50% remaining.<sup>5</sup>
  - Huang et al surveys showed that most children took opioid medication for 3 days at most, if at all (6% did not take any), and 86% had leftover medication. The majority of patients (90%) did not require an opioid medication refill. Among those with residual opioid medications, 59% did not dispose of the remaining medication.<sup>6</sup>
- Opioid prescription duration following appendectomy in children increases risk of ED visits for constipation, but not for pain or refill.<sup>7</sup>

To better guide clinicians the Cook Children's Opioid Stewardship Committee, a multidisciplinary group including surgeons, pain specialists, hospitalist, anesthesiologist, emergency room physicians, palliative care providers, pharmacists and nurses, gathered consensus recommendations based on clinical expertise to describe best practices for outpatient opioid prescribing at the time of discharge after common pediatric surgical procedures.

The following recommendations are intended for use in postsurgical opioid prescribing by procedure for an average, opioid naïve, patient over the age of 6 months, with no chronic pain.

General Pediatric Surgeries	Discharge Pain Expectations	Recommended Number of Doses
Appendectomy - ruptured, laparoscopic	Moderate	0 - 10 doses
Appendectomy, laparoscopic	Mild	0 - 5 doses
Central line insertion	Mild	0 - 5 doses
Cholecystectomy, laparoscopic	Mild - Moderate	0 - 10 doses
Circumcision	Mild	0 - 5 doses
Circumcision - over 5 year of age	Moderate	0 - 10 doses
Gastrocutaneous fistula closures	Mild	0 - 5 doses
G-Button change	None	None
G-Button insertion, laparoscopic	Mild	0 - 5 doses
Inguinal hernia repair	Mild	0 - 5 doses
Inguinal hernia repair, bilateral	Mild	0 - 5 doses
Port placement	Mild	0 - 5 doses
Port removal	Mild	0 - 5 doses
Rigid esophagoscopy removal of foreign body	None	None
Small bowel resection	Mild	0 - 5 doses
Ventral hernia repairs	Mild	0 - 5 doses

Orthopedic Pediatric Surgeries	Discharge Pain Expectations	Recommended Number of Doses
Closed reduction and casting of a forearm	Mild	0 - 5 doses
Percutaneous insertion of internal fixation into upper or lower extremity	Mild – Moderate	0 - 10 doses
Percutaneous pinning of humerus	Mild – Moderate	0 - 10 doses

ENT Pediatric Surgeries	Discharge Pain Expectations	Recommended Number of Doses
Adenoidectomy	None	None
Bilateral inferior turbinate reduction	None	None
Bronchoscopy	None	None
Cochlear implant	Mild	0 - 5 doses
Laryngoscopy	None	None
Mastoidectomy	Mild	0 - 5 doses
Myringotomy	None	None
Removal of tympanostomy tube	None	None
Septoplasty	Moderate	0 - 10 doses
Sinus surgery	Mild	0 - 5 doses
Tonsillectomy	Moderate - Severe	0 - 15 doses
Tympanoplasty	Mild	0 - 5 doses
Tympanostomy tube placement	None	None

Urology Surgeries	Discharge Pain Expectations	Recommended Number of Doses
<b>Bladder</b>		
Augmentation cystoplasty	Moderate	0 - 10 doses
Catheter insertion	None	None
Vesicostomy	Moderate	0 - 10 doses
<b>Kidney</b>		
Transplant recipient	Moderate	0 - 10 doses
Pyeloplasty	Mild	0 - 5 doses
<b>Penile</b>		
Adhesion release/frenulectomy	Mild	0 - 5 doses
Circumcision	Mild	0 - 5 doses
Circumcision - over 5 years of age	Moderate	0 - 10 doses
Curvature repair	Mild	0 - 5 doses
Hypospadias repair staged	Severe	0 - 15 doses
Meatotomy	Mild	0 - 5 doses
Phalloplasty	Mild	0 - 5 doses
<b>Peritoneal</b>		
Catheter insertion/removal	Mild	0 - 5 doses
<b>Scrotum/Testes</b>		
Epididymal cyst excision	None	None
Torsion repair	Mild	0 - 5 doses
Hydrocelectomy	Mild	0 - 5 doses
Orchiectomy/orchiopexy	Moderate	0 - 10 doses
Scrotoplasty	Mild	0 - 5 doses
Scrotum irrigation and debridement	Mild	0 - 5 doses
Varicocelectomy	Mild - Moderate	0 - 10 doses
<b>Ureter/Urethra</b>		
Cystoscopy	None	None
Cystoscopy with stent/tube placement	Mild - Moderate	0 - 10 doses
Extracorporeal shock wave lithotripsy	Mild	0 - 5 doses
Urachal remnant excision	Mild	0 - 5 doses
Ureteral reimplantation	Moderate-Severe	0 - 15 doses
Ureteroneocystostomy	Mild - Moderate	0 - 10 doses
Urethral excision lesion	None	None
Urethrocutaneous fistula repair	Moderate	0 - 10 doses
Urethroplasty	Severe	0 - 15 doses
<b>Vaginal</b>		
Hymenectomy	None	None
Vaginal exam under anesthesia	None	None

Neurosurgery Procedures	Discharge Pain Expectations	Recommended Number of Opioid Doses
Baclofen pump placement, new or revision	Mild-Severe	0 - 15 doses
Chiari with or without duraplasty	Moderate	0 - 10 doses
Craniotomy for hemispherectomy/focal excision	Mild	0 - 5 doses
Craniotomy for tumor resection	Moderate	0 - 10 doses
Deep Brain Stimulator-Cranial procedure, new or revision	Moderate	0 - 10 doses
Deep Brain Stimulator-Generator procedure, new or revision	Mild	0 - 5 doses
Endoscopic cranial vault reconstruction	Mild	0 - 5 doses
ICP monitor placement or removal	None	None
Open cranial vault reconstruction	Moderate	0 - 10 doses
Shunt placement-Distal, new or revision	Moderate	0 - 10 doses
Shunt placement-Proximal, new or revision	Mild	0 - 5 doses
Spinal fusions/complex spine procedures	Severe	Consult pain service
Tethered cord release	Mild	0 - 5 doses
Vagus Nerve Stimulator placement, new or revision	Mild	0 - 5 doses

## References:

1. <https://www.cdc.gov/drugoverdose/data/statedeaths.html>
2. [Overton HN, Hanna MN, Bruhn WE, Hutfless S, Bicket MC, Makary MA. Opioid-Prescribing Guidelines for Common Surgical Procedures: An Expert Panel Consensus. \*Journal Of The American College Of Surgeons\*. 2018;227\(4\):411-418. doi:10.1016/j.jamcollsurg.2018.07.659](#)
3. [Miech R, Johnston L, O'Malley PM, Keyes KM, Heard K. Prescription Opioids in Adolescence and Future Opioid Misuse. \*Pediatrics\*. 2015;136\(5\):e1169-e1177. doi:10.1542/peds.2015-1364.](#)
4. [Howard R, Fry B, Gunaseelan V, et al. Association of Opioid Prescribing With Opioid Consumption After Surgery in Michigan. \*JAMA Surgery\*. November 2018:e184234. doi:10.1001/jamasurg.2018.4234.](#)
5. [Monitto CL, Hsu A, Gao S, et al. Opioid Prescribing for the Treatment of Acute Pain in Children on Hospital Discharge. \*Anesthesia And Analgesia\*. 2017;125\(6\):2113-2122. doi:10.1213/ANE.0000000000002586.](#)
6. [Huang JS, Kuelbs CL. Clinician opioid prescribing practices and patient utilization of prescribed opioids in pediatrics. \*Journal Of Opioid Management\*. 2018;14\(5\):309-316. doi:10.5055/jom.2018.0463.](#)
7. [Sonderman KA, Wolf LL, et al. Opioid Prescription Patterns for Children Following Laparoscopic Appendectomy. \*Ann Surg\*. 2018 Dec 22. doi: 10.1097/SLA.0000000000003171](#)