

Comparing Provider and Adolescent Estimates of Postoperative Opioid Use

Emma Kirkpatrick, BS (Keck School of Medicine of USC); Olivia A. Keane, MD (CHLA); Shadassa Ourshalimian, MPH (CHLA, USC); Madeleine Ing, MD, MPH (USC); Marjorie Odegard, MD (CHLA); Eugene Kim, MD (CHLA); Lorraine I. Kelley-Quon, MD, MSHS, FACS (CHLA, USC)

Background: Most adolescents report unused opioid pills after recovering from surgery. When surgeons receive individualized feedback comparing their opioid prescribing habits to other surgeons, excess opioid prescribing decreases. However, such interventions do not capture actual patient-reported opioid use.

Study Design: We recruited pediatric surgery residents, fellows, advanced practitioners, and surgeons from four surgical divisions at a tertiary care children's hospital to complete a novel interactive survey. Providers reviewed clinical vignettes based on real-world opioid use data reported by adolescents who underwent surgery at our institution. After each vignette, providers were asked to select the number of opioid pills they would prescribe and then compare their responses to adolescent-reported use. We then measured provider willingness to change prescribing practices based on adolescent report of actual opioid use.

Results: Overall provider response rate was 41.3% (N=38/92). Providers underestimated the number of opioids used for posterior spinal fusion, open pectus excavatum repair, open pectus carinatum repair, knee arthroscopy, and tonsillectomy and overestimated opioid use following hip reconstruction. Differences in median postoperative opioid use estimates from providers versus adolescent-reported use were significant for knee arthroscopy (10 IQR[0-3] vs. 3 IQR[1.5-13]; $p < 0.001$) and tonsillectomy (0 IQR[0-2.5] vs. 1 IQR[0-7]; $p = 0.043$). Overall, general pediatric surgery providers underestimated the number of opioids used while orthopedic

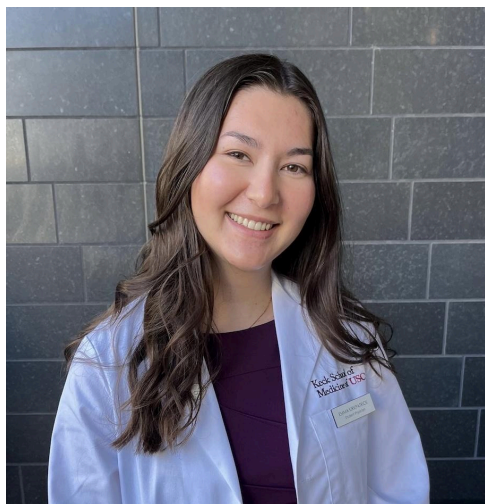
and cardiothoracic providers overestimated opioid use. Differences between provider specialty were significant for posterior spinal fusion ($p=0.022$), knee arthroscopy ($p<0.001$), and tonsillectomy ($p=0.005$). The number of opioids prescribed varied by provider role and 88.9% of providers ($N=32/36$) reported that they would change prescribing habits based on adolescent reports.

Conclusion: There are significant differences in provider perceptions of postoperative prescription opioid use versus adolescent-reported use. However, when presented with real-world adolescent opioid use data, providers report a willingness to change prescribing practices in the appropriate direction. Our study underscores the role of tracking patient-reported opioid use after surgery. Individualized prescriber feedback based on patient-reported opioid use after surgery may be a more accurate and patient-centered way to decrease excess opioid prescribing.

Table: Number of prescription opioid pills recommended by providers compared to number of prescription opioid pills used by adolescents

Procedures	Survey Provider recommended		Adolescent -reported		Difference of medians	P-value
	Median	IQR	Median	IQR		
Posterior spinal fusion	6.5	4-12	10	5-20	-3.5	0.092
Open pectus excavatum repair	5.5	2.5-12	8	4-10	-2.5	0.704
Open pectus carinatum repair	7.25	3-12	10	10-10	-2.75	0.720
Hip reconstruction	10	5-15	6.5	4.5-11.5	+3.5	0.676
Knee Arthroscopy	0	0-3	3	1.5-13	-3	<.001
Tonsillectomy	0	0-2.5	1	0-7	-1	0.043

1 opioid pill = 5 mg oxycodone



Emma Kirkpatrick is currently a third-year medical student at the Keck School of Medicine of USC. She graduated from Duke University with a bachelor's degree in neuroscience and minors in chemistry and psychology. She plans to pursue a career in surgery with interests in pediatric surgery, opioid stewardship, and global health. She hopes to contribute to research and innovation that minimizes disparities for vulnerable populations.

Email: ekirkpat@usc.edu