

PRESS RELEASE

Ten hospitals reduced opioid prescriptions for children who underwent appendectomy through a quality improvement initiative

Use of ACS NSQIP Pediatric led to 80% fewer prescriptions with no harm in patient outcomes

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Key Takeaways

- A quality improvement initiative implemented at 10 children's hospitals reduced opioid prescriptions in pediatric appendectomy patients by almost 80% using a standardized prescribing protocol.
- Emergency room visits were unchanged after implementation and family satisfaction with pain management was high.
- Use of the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) Pediatric was pivotal in enabling participating hospitals to more readily identify variations in prescribing practices.

CHICAGO (February 3, 2022): As public awareness of opioid abuse in the U.S. has grown, so too have efforts to reduce—or even eliminate—the use of opioids after various types of operations. A regional quality improvement (QI) effort to reduce opioid prescriptions in children who have undergone an appendectomy has led to an almost 80% reduction in prescribing. The study involved implementing a standardized prescribing protocol that aimed to significantly curtail opioid prescriptions for these young patients.

"We were able to demonstrate that we could minimize opioid prescribing and at the same time still show there was no increase in emergency room visits after surgery or that families were dissatisfied with pain management," said lead study author Lorraine Kelley-Quon, MD, MSHS, FACS, pediatric surgeon at Children's Hospital Los Angeles, and assistant professor of clinical surgery and population and public health sciences at Keck School of Medicine of the University of Southern California.

Study results from this QI initiative at 10 children's hospitals in the western U.S. have been **published** online in the Journal of the American College of Surgeons (JACS). The study included 1,524 children who had appendectomies at the 10 hospitals; all are members of the Western Pediatric Surgery Research Consortium.

Study background

Appendectomy is the most common operation in hospitalized children. "We wanted to do a project to minimize the variation in opioid prescribing for children that undergo appendectomy. The way we wanted to do that was to use an already existing data infrastructure, the American College of Surgeons National Surgical Quality Improvement Program® Pediatric platform, to streamline that process," Dr. Kelley-Quon said. Developed in collaboration with the American Pediatric Surgical Association, ACS developed the pediatric version of NSQIP specifically for specialties in children's surgery. Similar to ACS NSQIP, the pediatric program enables participating hospitals to collect highly reliable clinical data and compare their surgical outcomes with the outcomes of other participants in the program.

Previous studies have found that typically half or more of opioid prescriptions families receive after surgery go unused.^{1,2} "There has been a great amount of data in the last few years that have shown that most children undergoing surgery who receive an opioid prescription receive more opioids than are actually necessary," Dr. Kelley-Quon said. She noted that half of the hospitals in the study already had a protocol in place to minimize prescribing opioids to children after appendectomy, but the remainder had no standardized protocol for prescribing opioids and the practice varied among surgeons.

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MD, MSHS, FACS

Study details

The protocol used recently published guidelines, which Dr. Kelley-Quon coauthored, for opioid prescribing in pediatric surgery patients.³ The implementation was focused around three pillars, Dr. Kelley-Quon explained:

- educating health care providers about the risks of misuse and abuse related to unused prescription opioids
- emphasizing use of over-the-counter non-opioid pain medicine, such as acetaminophen and ibuprofen
- engaging families in the child's post-surgery pain management

Study findings and conclusions

After the QI program was implemented the researchers reported that:

- 4% of children went home with opioid prescriptions compared with 18.2% beforehand (p<0.001), a decrease of 78% on average.
- In the hospitals that didn't have a prescribing protocol, the reduction was similarly significant: from 37.9% before implementation to 8.8% after (p<0.001), a 77% reduction.
- The reduction was even significant in hospitals that had a protocol: from 2.7% before to 0.8% after (p=0.003), a 70% change.

The researchers note that some providers send children home after an appendectomy with opioid prescriptions to prevent emergency room visits for pain flares, even though another study reported that children who received opioids had higher rates of ER visits a month after surgery.⁴ In the study by Dr. Kelley-Quon and colleagues, ER visits were essentially unchanged after the QI program:

- 8.9% before vs. 9.9% after (p=0.54).
- Also, average pain management satisfaction scores were high after the intervention: 4.7 on a scale of 0 to 5.

"The study provides important information for both pediatric and general surgeons, as both specialists perform appendectomies and other surgical procedures for children," said Mary E. Fallat, MD, FACS, FAAP, professor at the University of Louisville School of Medicine and medical director, surgical quality, at Norton Children's Hospital in Louisville, Kentucky, who was not involved in the study.

"General surgeons may not be as attuned to advances in postoperative pain control in children's hospitals. Due to the heightened awareness of opioid abuse, many pediatric and pediatric subspecialty surgeons have embraced the concept of moving completely away from narcotic use after outpatient procedures [hernias] and short-stay procedures [appendectomy and cholecystectomy] and recommend acetaminophen alternating with nonsteroidal anti-inflammatory drugs to augment local and regional anesthesia use in the operating room," said Dr. Fallat, who is also Vice Chair of the ACS Children's Surgery Verification Program.

Dr. Kelley-Quon noted that use of ACS NSQIP Pediatric was pivotal in implementing the study intervention. "NSQIP has really helped surgeons see how an individual hospital can compare itself with other hospitals in the country," she said. "What our project did was take that one step farther to enable a group of hospitals to use the platform in real time to really change practice for a specific quality improvement initiative across several hospitals at once."

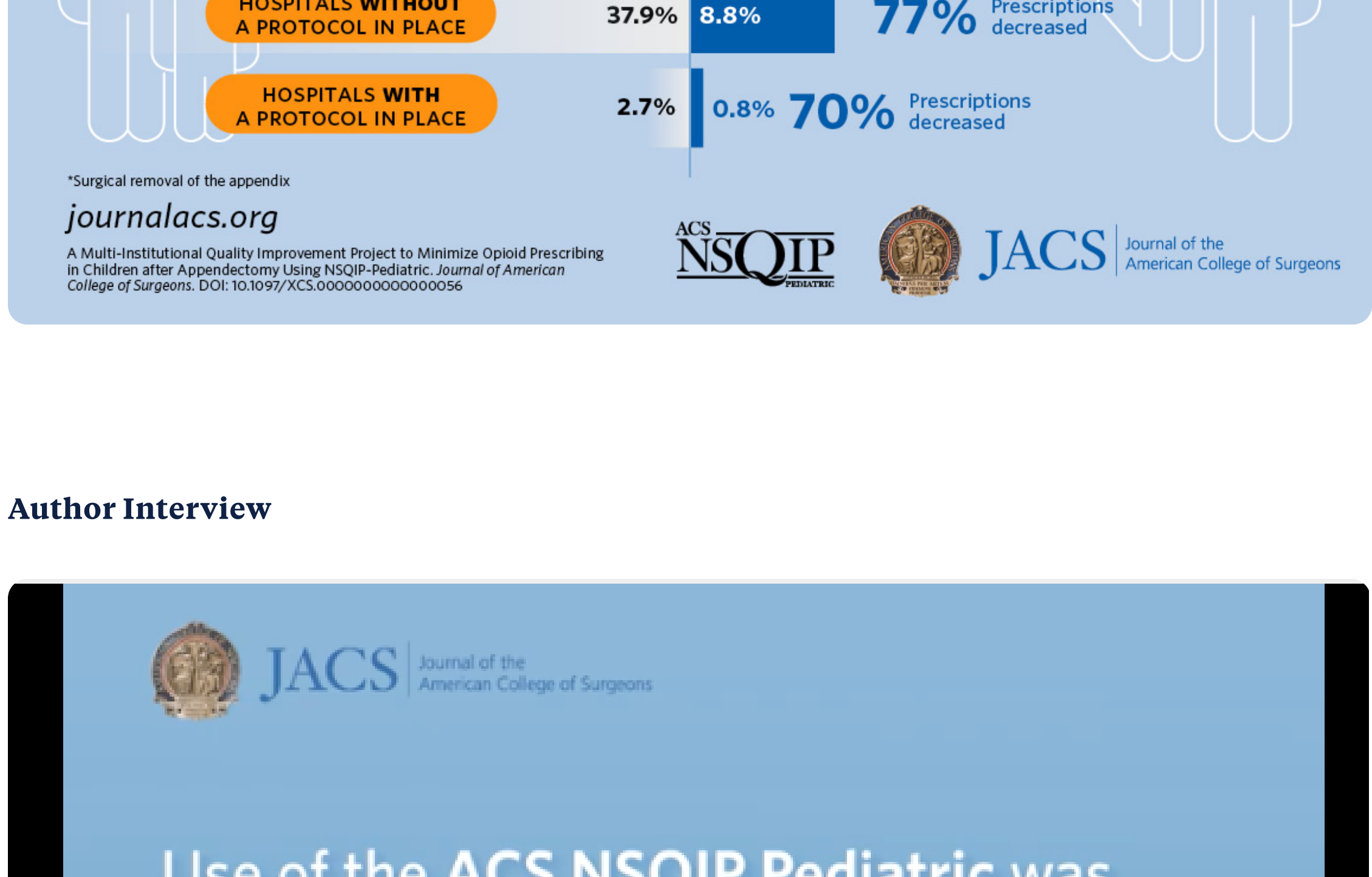
Added Dr. Fallat, "The study confirms the use of NSQIP pediatric as a valuable database for doing research studies that can lead to improved patient care. The hospital consortium model allows for research studies like this with the accrual of a much larger population of patients." She noted that most of the hospitals involved in the study are either verified or in the process of achieving verification in the ACS Children's Surgery Verification program. An update of that program, to take effect later in the year, will include an opioid stewardship model. "This model will identify an approach and its feasibility for those hospitals that have yet to embrace it," she said. The new standards are available online.

Dr. Kelley-Quon's coauthors are Shadassa Ourshalimian, MPH; Justin Lee, MD; Katie W. Russell, MD, FACS; Karen Kling, MD, FACS; Stephen B. Shew, MD, FACS; Claudia Mueller, PhD, MD, FACS; Aaron R. Jensen, MD, MEd, MS, FACS; Lan Vu, MD, FACS; Benjamin Padilla, MD, FACS; Daniel Ostlie, MD, FACS; Caitlin Smith, MD, FACS; Thomas Inge, MD, FACS; Jonathan Roach, MD, FACS; Romeo Ignacio, MD, FACS; Katrine Lofberg, MD, FACS; Stephanie Radu, MCR; Autumn Rohan; and Kasper S. Wang, MD, FACS.

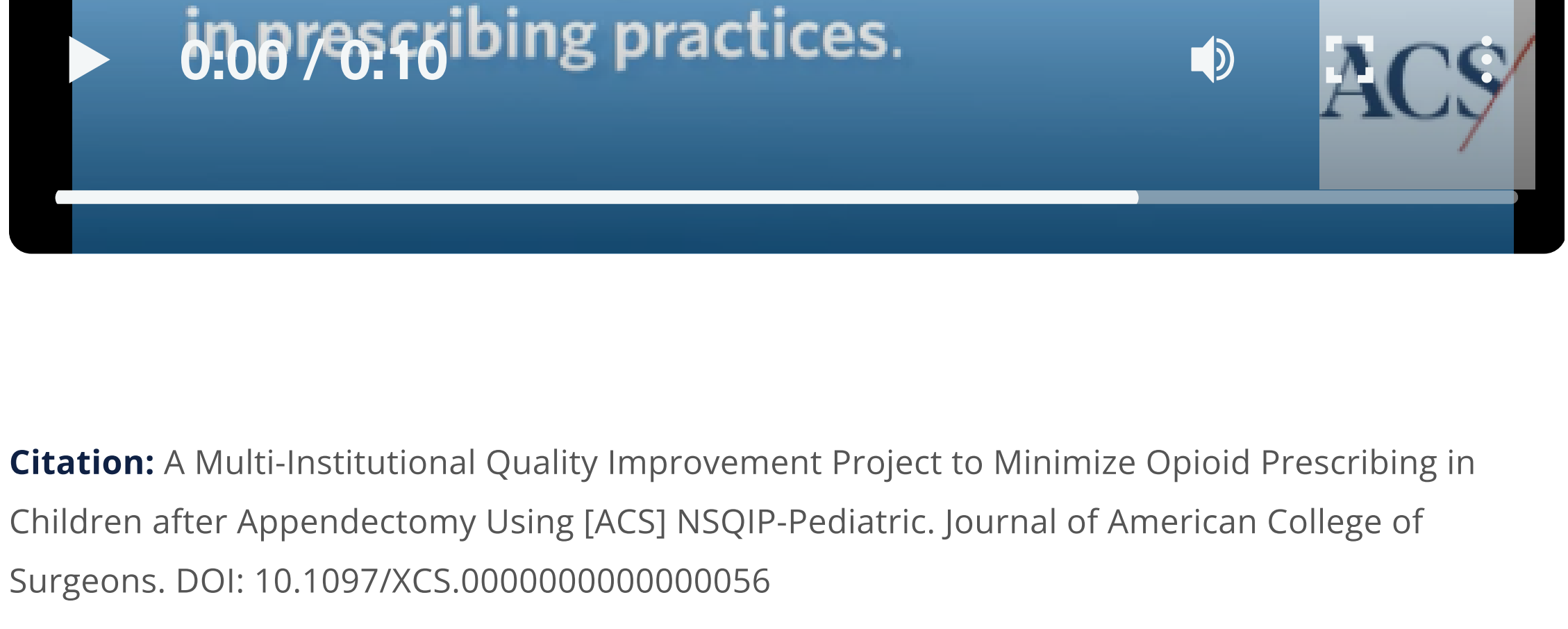
Dr. Kelley-Quon and coauthors have no financial relationships to disclose. Dr. Fallat has no relevant disclosures.

"FACS" designates that a surgeon is a Fellow of the American College of Surgeons.

Infographic



Author Interview



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