Background
Appendectomy for acute appendicitis is the most common intra-abdominal operation in children. However, there is no evidence-based consensus regarding timing for appendectomy following initial presentation despite extensive research aiming to characterize the effects of in-hospital delays on patient morbidity and mortality. Similarly, publications detailing the impact of increased preoperative delay on measures of efficiency of healthcare delivery, including patient cost and hospital length of stay, have failed to report congruent findings. In the absence of guidelines detailing the urgency of surgical intervention following diagnosis, the practice of delaying appendectomy has become more common. The potential benefits of increased urgency of appendectomy following the diagnosis of acute appendicitis must be balanced against potential costs to healthcare system burden and surgeon wellness.

Research Objectives
Through retrospective analysis of an institutional initiative to expedite all appendectomies during a trial period, we aimed to characterize the effects of emergent appendectomy for acute appendicitis on patient safety and healthcare system efficiency when compared to standard workflow. Primary outcomes studies were perforation rate, 30-day readmission, time in emergency department (ED), total preoperative time, and hospital length of stay.

Methods
Medical records were reviewed from pediatric patients who underwent an appendectomy at Lurie Children’s Hospital from August 2018 to 2019 through 1/31/20 with urgent workflow.

Results
164 patients underwent an appendectomy during the trial periods, with 93 (56.7%) presenting in the expedited workflow period. In aggregate, there were no significant differences in baseline demographics, symptom duration, presentation time, perforation rates, 30-day readmissions, or re-intervention rates between the two groups. The expedited workflow cohort was associated with shorter in-hospital time to OR (p<0.01) and hospital length of stay (p=0.010). In multivariate regression, complicated disease was associated with prehospital duration of symptoms, without significant effect from in-hospital time to OR.

Conclusions
We found that urgent surgical intervention for appendicitis had no effect on disease severity, patient morbidity, or other clinical outcomes. Notably, the overall hospital length of stay was shorter in the expedited cohort, however this must be interpreted in the context of quality improvement initiatives which were implemented in the intervening time between the standard and expedited trial periods. We conclude that outcomes associated with appendectomy are best predicted by prehospital factors, such as duration of symptoms, rather than in-hospital delays in surgical management.

Bibliography