Background

- Unplanned post-op intubation has been associated with increased morbidity, mortality and health care utilization.1,2
- Post-op intubation can be a serious adverse hospital event.3,4
- Little is known regarding the risk factors that contribute to unplanned post-operative intubations following pediatric surgery.5,6

Objective

- Our objective was to describe the incidence and predictors of unplanned early (<3 days) and 30-day post-operative intubation following non-emergent, non-cardiac pediatric surgery.

Methods

- The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) Pediatric is a multi-center retrospectively sampled pediatric database of validated, risk-adjusted outcomes reported by inpatient and outpatient programs.
- We used the 2012-2014 ACS NSQIP-Pediatric Participant Use Data File (n=183,233)
- Inclusion criteria:
  - Elective surgery, inpatient, non-cardiac surgery, no cardiac history, no tracheostomy history or no ventilator dependence preoperatively
  - Our patient study population included a total of 54,767 pediatric patients

Results

- Overall incidence of unplanned postoperative intubation was 0.55% within 30-days of surgery (303/54,767)
- Overall incidence of unplanned postoperative intubation was 0.34% within 3-days of surgery (189/54,767)
- 62.4% (189/303) of pediatric patients who required an unplanned postoperative intubation in a 30-day period, required the intubation within the first 3 days following surgery.
- The median time to unplanned postoperative intubation was 2 days (25th to 75th Percentile Range of 0-6 days).
- Statistically significant independent risk factors associated with unplanned postoperative intubation included: Low Gestational Age at Birth, Prooperative Oxygen Use, Prooperative Steroid Use, Weight Loss Prior to Surgery. Supplemental Nutrition Use, ASA Status

Discussion

- About 1/3 of unplanned post-operative intubations occurred in the first 3 days following surgery.
- Patient and surgical risk factors can be used in order to have a multi-disciplinary discussion on perioperative care and resource utilization.
- Further work should focus on developing and validating a pediatric perioperative scoring system to reduce the incidence of unplanned postoperative intubations via risk stratification, clinical decision support and changes to clinical management.

References

5 Hunsicker MI. Clinical indicators and other complications in the recovery room or postanesthesia care unit. Anesthesiology. 1996; 84: 1146-1149.