

Seven-day and thirty-day hospital revisit rates and factors associated with revisits in children undergoing surgery at ambulatory surgical centers

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Background

- Unplanned hospital admissions and Emergency Department visits (*hospital revisits*) following ambulatory surgery among children are costly and may be preventable
- There is interest in using 30 day revisits after ambulatory surgery as a quality indicator for pediatric hospitals
- Several studies examined pediatric hospital readmissions using administrative data
 - None examined revisit causes after ambulatory surgery at surgicenters specifically
 - Few studies examined medical records to determine revisit causes

Objective

Identify causes of unplanned hospital revisit among children having outpatient anesthetics at satellite surgicenters of tertiary care children's hospital

Methods

Manual review of medical records at single tertiary care children's hospital 2/1/2016-2/28/2017

Outcomes assessed:

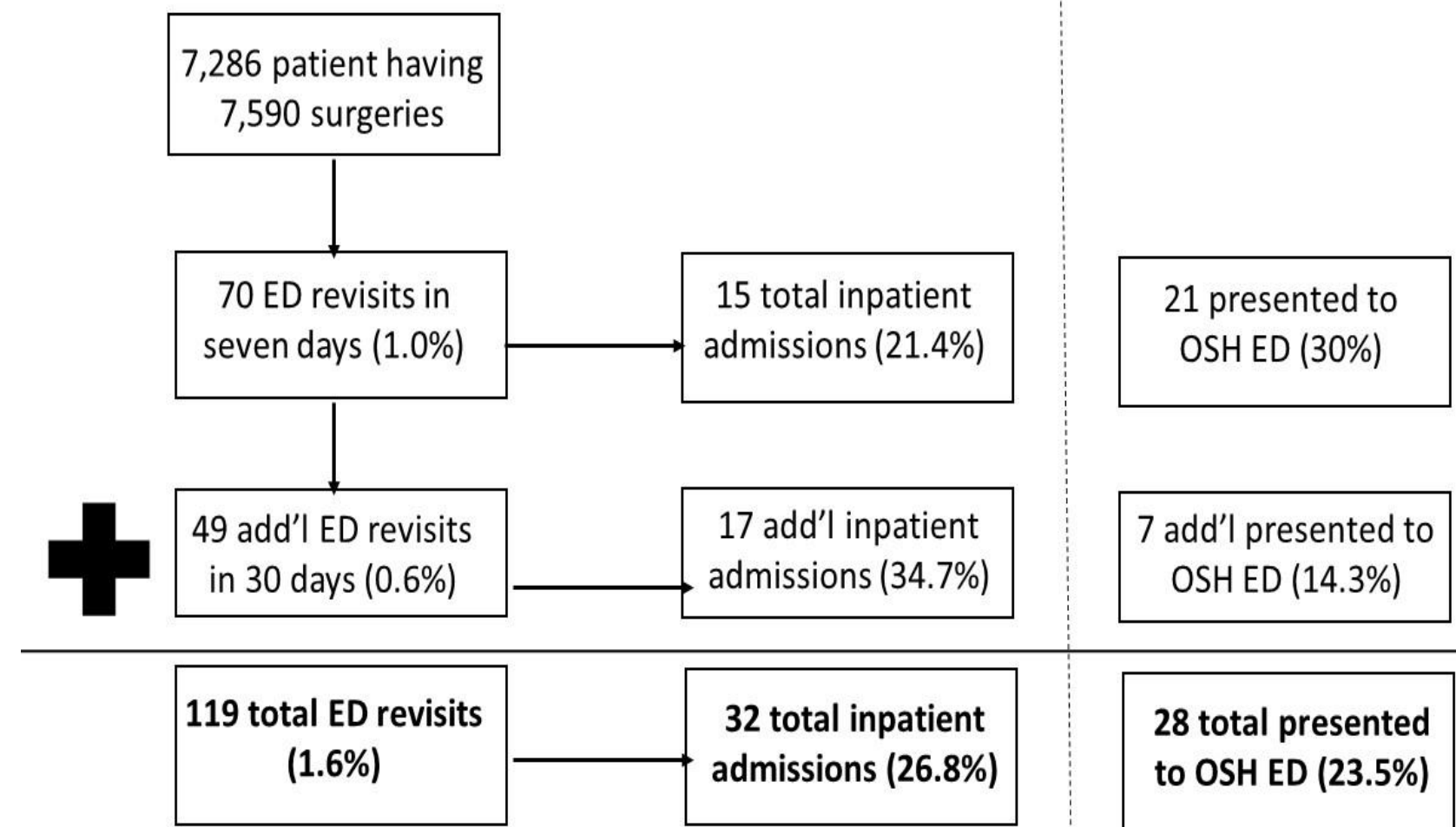
- The symptoms prompting revisit
- Primary diagnosis for the revisit

Exclusions:

- ASA classification >3
- Patients receiving >4 anesthetics over 1 year
- Patient age >17 years

Results

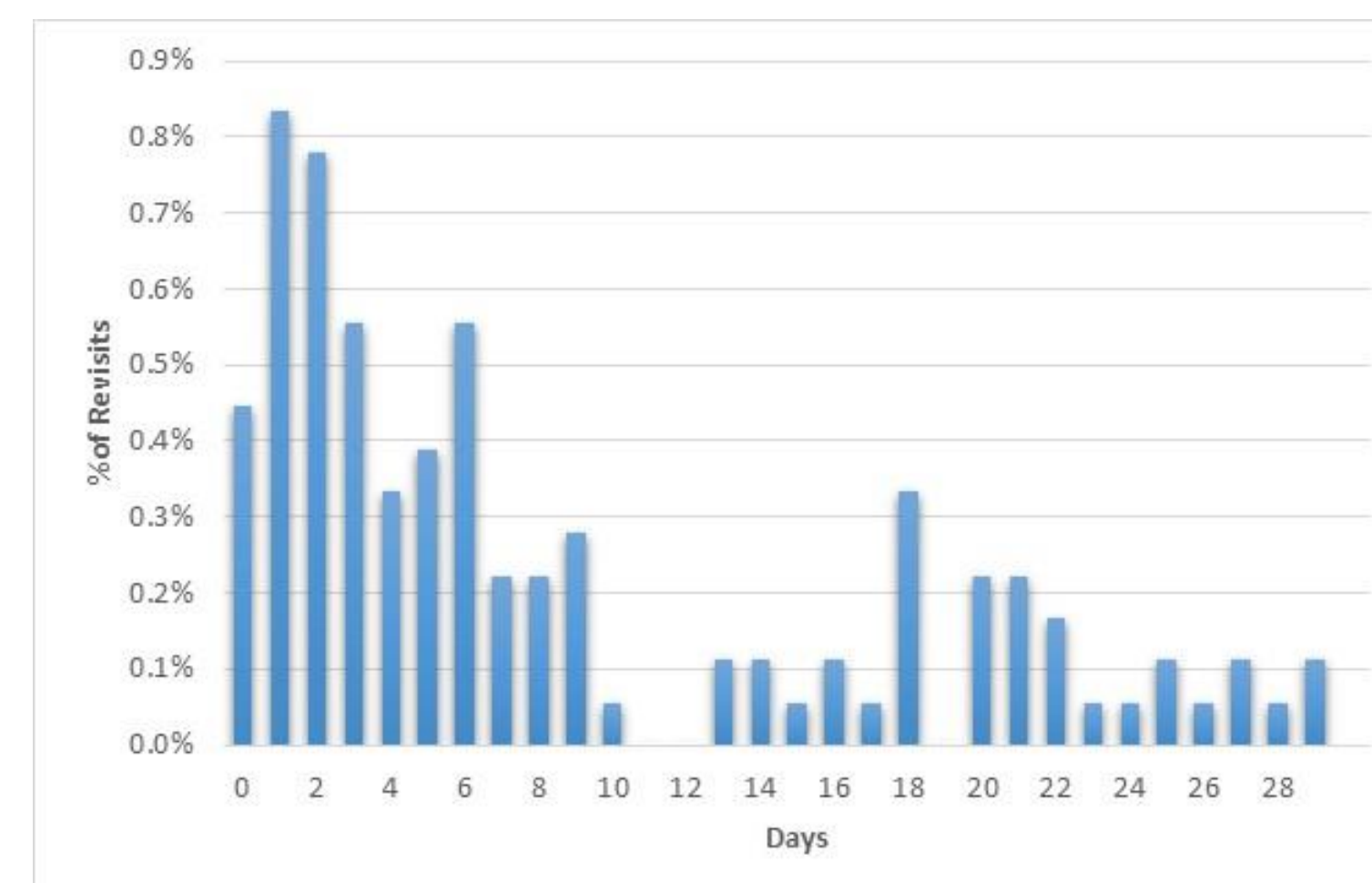
Total Procedures, Revisits, and Readmissions



Most Common Procedures

| CPT Description | N | # Revisits (%) |
|---|------|----------------|
| Tympanostomy w/General Anesthesia | 2776 | 29 (1.0%) |
| Tonsillectomy & Adenoidectomy, Age<12 y | 729 | 41 (5.6%) |
| Adenoidectomy, Age<12y | 441 | 4 (0.9%) |
| Upper Endoscopy with Biopsy | 357 | 2 (0.6%) |
| Tympanic Membrane Repair | 221 | 0 (0.0%) |

Days Between Surgery and Revisit



Results (continued)

Revisit Analysis

- Phone call to nurse triage preceded nearly all revisits
- ASA 3s had a longer duration between procedure and revisit (14 vs. 6 days), NS
- ASA 3s more likely to have 30d revisit (OR: 6.9 (95%CI 2.8, 17.4), p<0.0001)
- Medicaid (vs. private insurance) more likely to have 7d and 30d revisits (p<0.00001)
- Age, Race, Language, Ethnicity – not significant

Procedures with the Highest Readmission Rates

| CPT Description | N | # Revisits (%) |
|---|-----|----------------|
| Tonsillectomy & Adenoidectomy, Age>12 y | 70 | 4 (5.7%) |
| Hyospiadias Repair | 53 | 3 (5.7%) |
| Tonsillectomy & Adenoidectomy, Age<12 y | 729 | 41 (5.6%) |
| Knee Arthroscopy with Meniscus Repair | 26 | 1 (3.8%) |
| Penis Straightening | 28 | 1 (3.6%) |

Reasons for Readmission

| | Revisit | | Admission | |
|------------------|---------|-----------|-----------|-----------|
| | 7 days | 8-30 days | 7 days | 8-30 days |
| Bleeding | 27.4 | 16.3 | 66.7 | 33.3 |
| Fever | 23.2 | 40.8 | 13.3 | 44.4 |
| Pain | 27.4 | 2.0 | 6.7 | 5.6 |
| Wound | 8.2 | 10.2 | 6.7 | 16.7 |
| N/V/ Dehydration | 34.3 | 18.4 | 13.3 | 22.2 |
| Other | 17.8 | 44.9 | 26.7 | 22.2 |

- 7 day: Vomiting or dehydration, pain, and fever
- 8 – 30 days: Fever, another reason such as seizure, constipation, trauma
- Post-tonsillectomy bleeding was the most common reason for readmission

Conclusions

- Most revisits occurred <7d of surgery
- One third of revisits resulted in readmission
- Improved management of nausea/vomiting, pain, hydration, as well as better anticipatory guidance could reduce 7d revisits
- Revisits to outside hospital EDs may be underrepresented
- Future directions should explore if revisit to OSH ED associated with worse outcomes

Policy Implications

- Any quality indicator utilizing revisits should restrict duration after surgery to ~7d to capture revisits most likely attributable to surgery
- Reconsider whether revisit is actually a patient centered outcome
 - Patients/families may prefer to recover at home if safe to do so

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